



# A+ Server

## ASG-1115S-NE316R



USER'S MANUAL

Revision 1.0

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# Preface

## About this Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the A+ Server ASG-1115S-NE316R. Installation and maintenance should be performed by certified service technicians only.

Please refer to the server specifications page on our website for updates on supported memory, processors and operating systems (<http://www.supermicro.com>).

## Notes

For your system to work properly, please follow the links below to download all necessary drivers/utilities and the user's manual for your server.

- Supermicro product manuals: <http://www.supermicro.com/support/manuals/>
- Product drivers and utilities: <https://www.supermicro.com/wdl>
- Product safety info: [http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm)

If you have any questions, please contact our support team at:  
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This manual may be periodically updated without notice. Please check the Supermicro website for possible updates to the manual revision level.

## Secure Data Deletion

A secure data deletion tool designed to fully erase all data from storage devices can be found on our website: [https://www.supermicro.com/about/policies/disclaimer.cfm?url=/wdl/utility/Lot9\\_Secure\\_Data\\_Deletion.Utility/](https://www.supermicro.com/about/policies/disclaimer.cfm?url=/wdl/utility/Lot9_Secure_Data_Deletion.Utility/)

## Warnings

Special attention should be given to the following symbols used in this manual.



**Warning!** Indicates important information given to prevent equipment/property damage or personal injury.



**Warning!** Indicates high voltage may be encountered when performing a procedure.

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# Chapter 1

## Introduction

### 1.1 Overview

This chapter provides a brief outline of the functions and features of the A+ Server ASG-1115S-NE316R. The following provides an overview of the specifications and capabilities.

System Overview	
<b>Motherboard</b>	H13SSF
<b>Chassis</b>	CSE-126E32-R1K62P
<b>Processor Support</b>	Single AMD EPYC™ 9004 Series Processor in SP5 socket
<b>Memory</b>	24 DIMM slots with 2 DIMM per channel (up to 6 TB DDR5-4000 MT/s (1R)/3600 MT/s (2R)) -or- 12 DIMM slots with 1 DIMM per channel (up to 3 TB DDR5-4800 MT/s)
<b>Chipset</b>	System on Chip
<b>Drive Support</b>	Supports up to 16 hot-swap drive bays for E3.S (1T) NVMe drives Two M.2 NVMe/SATA slots with support for M-Key 2280 and 22110
<b>Expansion Slots</b>	Two PCIe 5.0 x16 slots (FHHL) - maximum boundary 4.376 x 6.00 x 0.8 in /111.15 x 167.65 x 20.32 mm Two Gen-Z x16 AIOM PCIe 5.0 connectors (OCP 3.0 SFF compliant)
<b>I/O Ports</b>	One BMC LAN port One VGA port Four USB 3.0 ports (two front and two rear)
<b>System Cooling</b>	Eight 4-cm heavy duty fans with optimal fan speed control One air shroud
<b>Power</b>	Two redundant power supplies: default 1600 Watts (Titanium Level)
<b>Form Factor</b>	1U Rackmount 1.7 x 17.2 x 29.4 in / 43 x 437 x 747 mm (H x W x D)

**Notes:** A Quick Reference Guide can be found on the product page of the Supermicro website. The following safety models associated with the ASG-1115S-NE316R have been certified as compliant with UL or CSA: 126E32-R16H13.

## 1.2 System Features

The following views of the system display the main features. Refer to [Appendix B](#) for additional specifications.

### Front View (E3.S 1T)

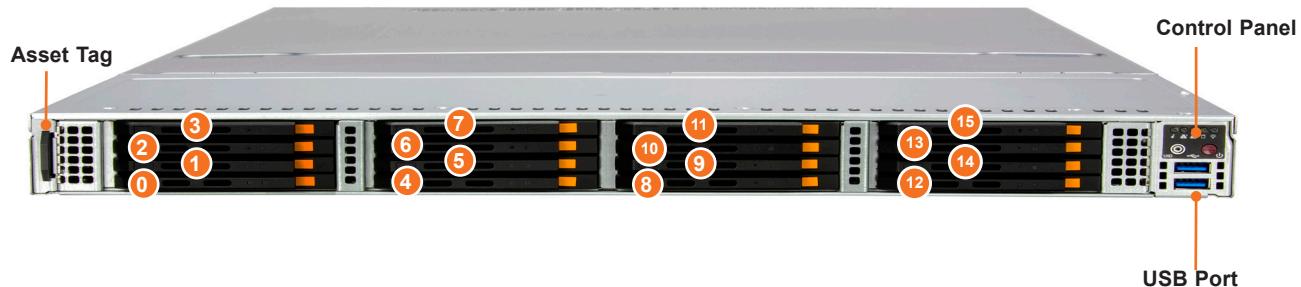


Figure 1-1. Front View

System Features: Front	
Feature	Description
Control Panel	One control panel
USB	Two Type A USB 3.0 ports
① to ⑯	Drive bays for NVMe E3.S (1T) drives
Asset Tag	Service/Asset Tag with BMC Password Reset

### Drive Carrier Indicators

Each drive carrier has two LED indicators: an activity indicator and a status indicator.

SMC EDSFF LED SPEC			
Backplane LED	Blinking Pattern	Color and Pattern	Remarks
Activity LED	Activity	Green blinking	
	No activity	Green on	
Status LED	Identify	Amber blinking	Drive fault on
	No identify	Amber off	Blinking 4 Hz

## Control Panel

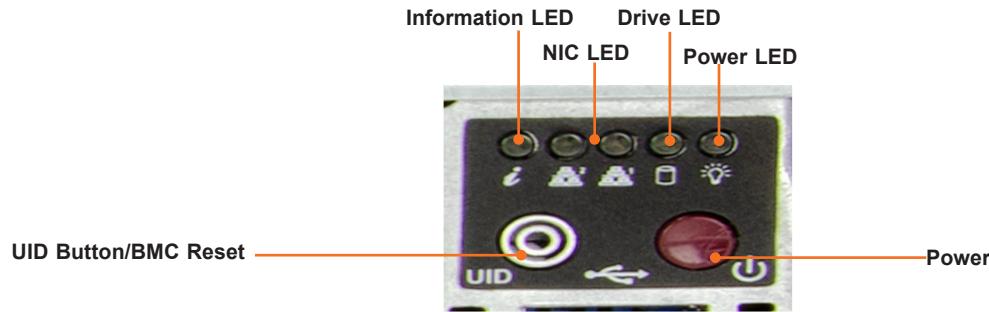


Figure 1-2. Control Panel

Control Panel Features	
Feature	Description
Power Button	The main power button is used to apply or remove power from the power supply to the server. Turning off system power with this button removes the main power but maintains standby power. To perform many maintenance tasks, you must also unplug system before servicing.
UID LED	The UID LED is used with the rear UID button. This indicator activates when the rear UID button is pressed. This is used to "mark" the system when servicing to easily pinpoint the system especially when working on a large server facility.
Power LED	Indicates power is being supplied to the system power supply. This LED should normally be illuminated when the system is operating.
Drive LED	Indicates activity on a drive when flashing.
NIC1 LED	Indicates network activity on LAN port 1, when flashing.
NIC2 LED	Indicates network activity on LAN port 2, when flashing.
Power Fail LED	Indicates a power supply module has failed.
Universal Information LED	See table below for details.

Information LED	
Color, Status	Description
Continuously on and red	An overheat condition has occurred. (This may be caused by cable congestion.)
Blinking red (1Hz)	Fan failure, check for an inoperative fan.
Solid blue	UID has been activated locally to locate the server in a rack environment.
Blinking blue (300 msec)	UID has been activated remotely using IPMI to locate the server in a rack environment
Blue, blinking at 10 Hz with Power LED blinking green	BMC/BIOS firmware is updating

## Rear View

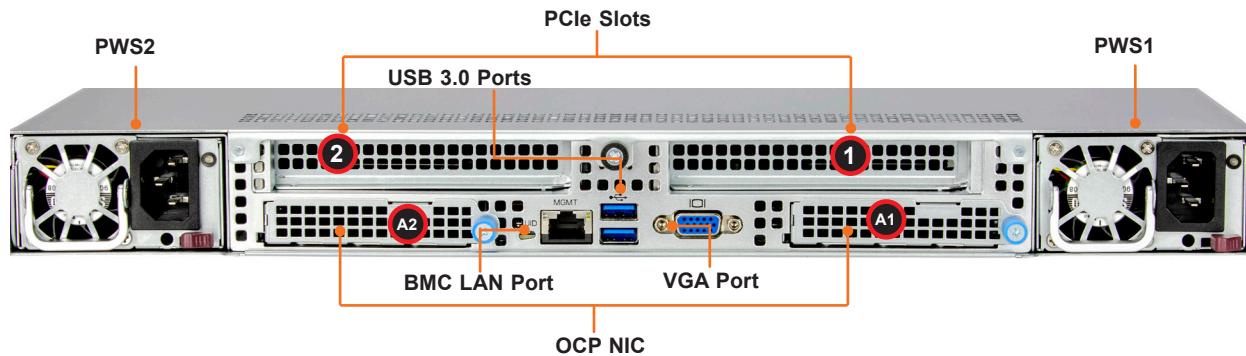


Figure 1-3. System: Rear View

System Features: Rear	
Feature	Description
Power Supplies	1600 Watt power supplies (redundant, with two power modules). PWS2 on the left, PWS1 on the right.
LAN Ports	Four OCP ports supported by two OCP NIC add-on cards
I/O Ports	One BMC LAN port, one VGA port, and two USB 3.0 ports
PCIe Slots	Two PCIe 5.0 x16 slots

Expansion Card Slots	
Item	Description
1 2	PCIe 5.0 x16 slots
A1 A2	AIOM slots

Power Supply Indicators	
LED Color and State	Power Supply Indicator
Solid Green	Indicates that the power supply is on
Blinking Green	Indicates that the power supply is plugged in and turned off by the system.
Blinking Amber	Indicates that the power supply has a warning condition and continues to operate.
Solid Amber	Indicates that the power supply is plugged in, and is in an abnormal state. The system might need service. Please contact Supermicro technical support
Off	No AC power to modules

## 1.3 System Architecture

This section covers the locations of the system's main components, a system block diagram, and a motherboard layout with the connectors.

### Main Components

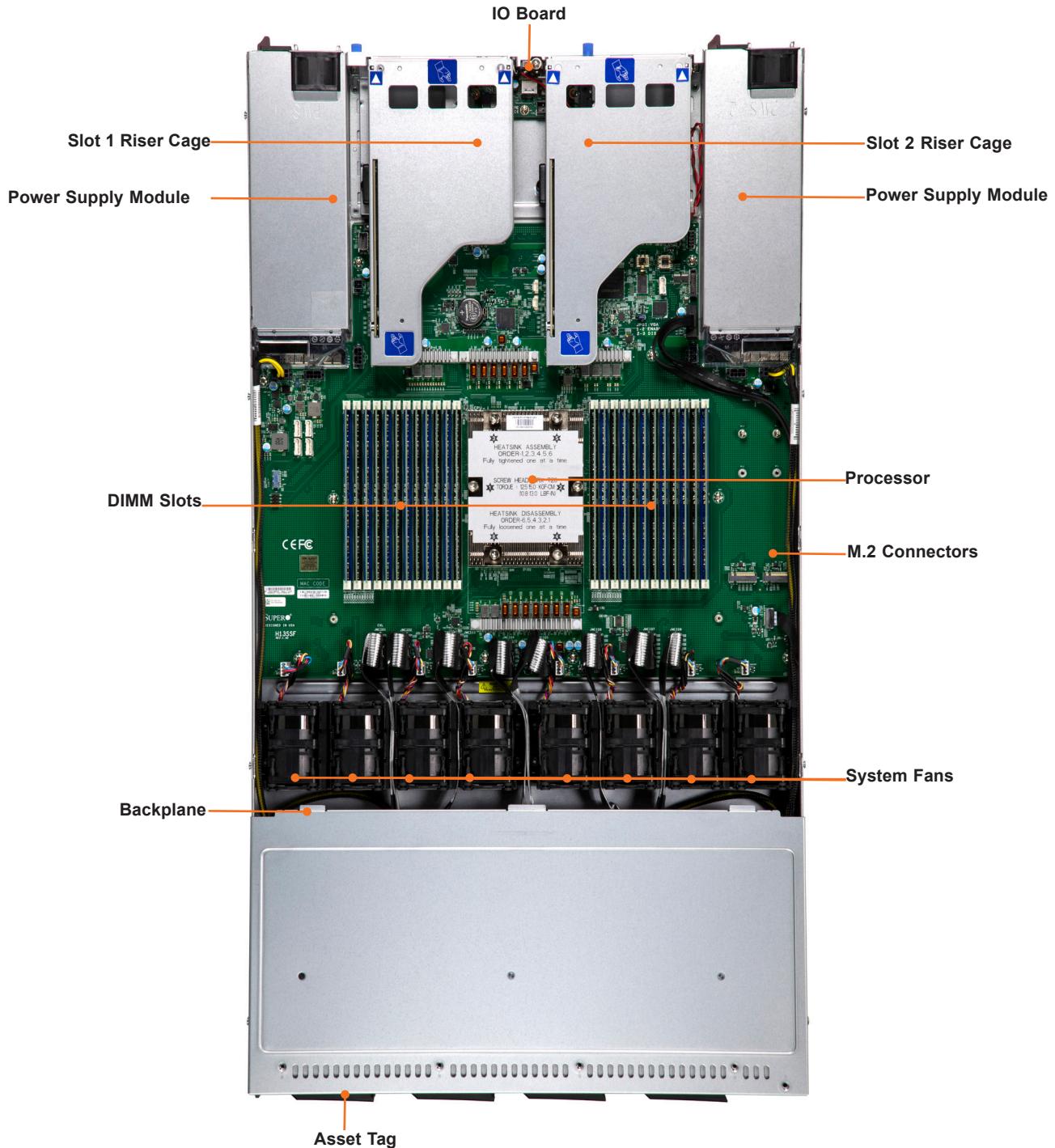


Figure 1-4. Main Component Locations

System Features: Top	
Feature	Description
Power Supply	1600 Watt power supplies (redundant, with two power modules). PWS1 on the left, PWS2 on the right.
DIMM slots	24 DIMM slots with 2 DIMMs per channel (up to 6 TB registered ECC DDR5 4800 MT/s)
Processor	Single AMD EPYC™ 9004 Series Processor in SP5 socket
System Fans	Eight 4-cm fans with optimal speed control, FAN-0210L4
Asset Tag	Pull tag with serial number and BMC ADMIN password
Backplanes	Two BPN-E3S5-126ESN (eight slots of PCIe Gen 5 four-lane E3.S storage per backplane)
M.2	Two M.2 NVMe/SATA slots with support for M-Key 2280 and 22110
Slot 1 Riser Cage	Riser Cage for one PCIe slot with riser card RSC-X-6G5
Slot 2 Riser Cage	Riser Cage for one PCIe slots with riser card RSC-X-6G5

## System Block Diagram

The block diagram below shows the connections and relationships between the subsystems and major components of the overall system.

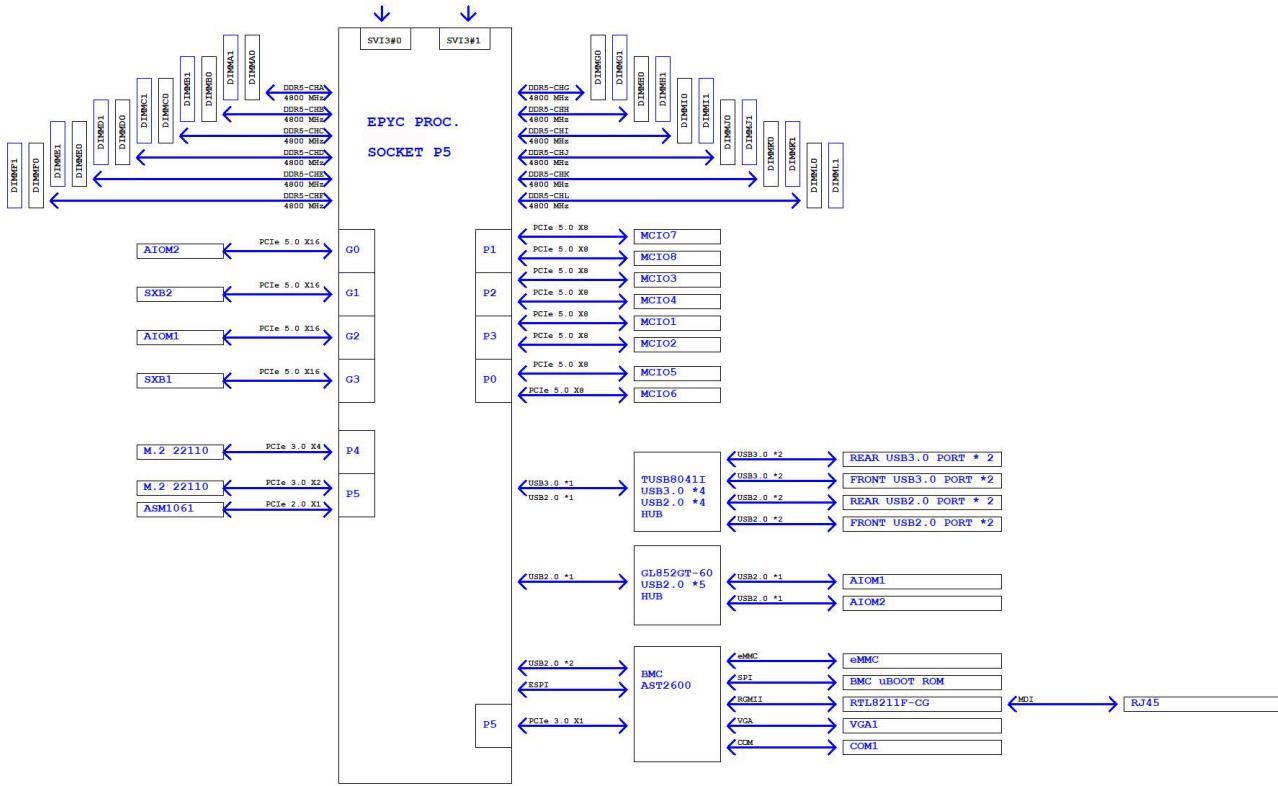
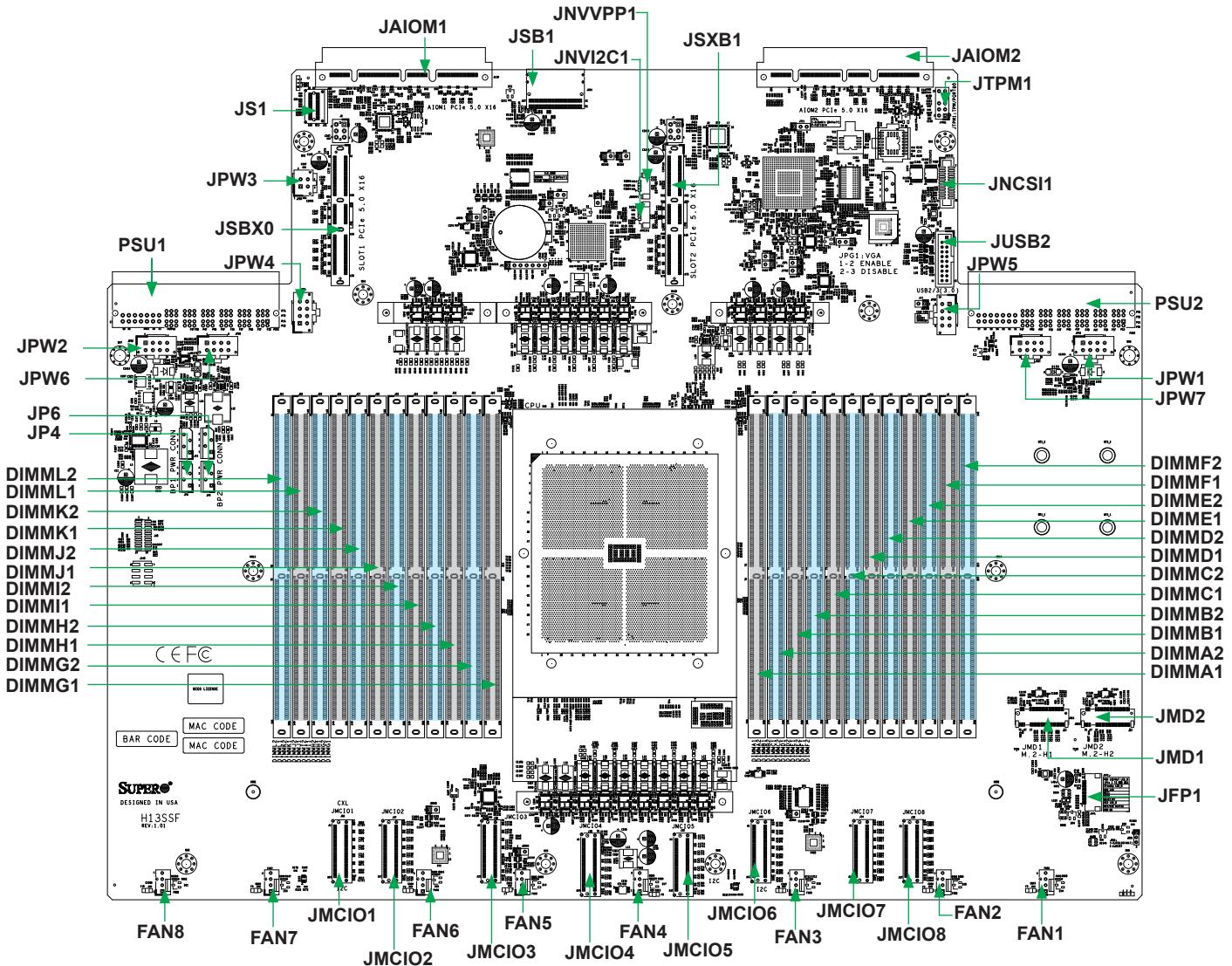


Figure 1-5. System Block Diagram

## 1.4 Motherboard Layout

Below is a layout of the H13SSF motherboard with a jumper, connector, and LED locations shown. See the table on the following page for descriptions. For detailed descriptions, pinout information, and jumper settings, refer to [Chapter 4](#) or the [Motherboard Manual](#).



## Quick Reference Table

Jumper	Description	Default Setting
JPG1	VGA Enable/Disable	Pins 1-2 (Enable)
LED	Description	Status
LED4	Power LED	Solid Green: Power On
LED1	BMC Heartbeat LED	Green: Blinking (BMC Normal) Green: Fast Blinking (BMC Initializing)
Connector	Description	
JNVVPP1	NVMe VPP and BMC I <sup>2</sup> C Header	
JNVI2C1	Riser card SMBus Header	
JAIOM1-JAIOM2	Supermicro® Advanced I/O Module (AIOM PCIe 5.0 x16) Slots	
JSXB0-1	Slot 1-2 PCIe 5.0 x16	
JMCIO1-8	Eight MCIO (PCIe 5.0 x8) Connectors MCIO1: JDBG2 / MCIO5: JDBG3 / MCIO6: JDBG4	
JPW1-2, 4-7	12 V 8-Pin GPU / Backplane / AOC Power Connectors	
JPW3	12 V, 5 V AUX / 4-Pin Auxiliary Backplane Power Connector	
JP4	The voltage of backplane JPWR2 is 3.3 V main power	
JP6	The voltage of backplane JPWR2 is 3.3 V main power	
BT1	Onboard Battery	
JTPM1	TPM (Trusted Platform Module) / Port 80	
FAN1-FAN8	4-pin system fan Header	
JFP1	Front Control Panel Header 1	
JMD1-JMD2	M.2-H1 PCIe 3.0 NVMe / M.2-H2 PCIe 3.0 NVMe (22110)	
JUSB2	USB 3.0 Header	
PSU1/PSU2	Motherboard Main Power Supply Connector	
JNCSI1	NCSI Connector	

**Note:** Jumpers, connectors, switches, and LED indicators that are not described in the preceding tables are for manufacturing testing purposes only, and are not covered in this manual.

# Chapter 2

## Chassis Installation

### 2.1 Overview

This chapter provides advice and instructions for mounting your chassis in a server rack. If your chassis is not already fully integrated with processors, system memory etc., refer to [Chapter 3](#) for details on installing those specific components.

**Caution:** Electrostatic Discharge (ESD) can damage electronic components. To prevent such damage to PCBs (printed circuit boards), it is important to use a grounded wrist strap, handle all PCBs by their edges and keep them in anti-static bags when not in use.

### 2.2 Preparing for Setup

The box in which the chassis was shipped should include the rackmount hardware needed to install it into the rack. Please read this section in its entirety before you begin the installation.

#### Choosing a Setup Location

- The chassis should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.
- Leave enough clearance in front of the rack so that you can open the front door completely (~25 inches) and approximately 30 inches of clearance in the back of the rack to allow sufficient space for airflow and access when servicing.
- This product should be installed only in a Restricted Access Location (dedicated equipment rooms, service closets, etc.).
- This product is not suitable for use with visual display workplace devices according to §2 of the German Ordinance for Work with Visual Display Units.

#### Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are extended to the floor so that the full weight of the rack rests on them.

- In single rack installations, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a server or other component from the rack.
- You should extend only one server or component at a time - extending two or more simultaneously may cause the rack to become unstable.

## System/Chassis Precautions

- Review the electrical and general safety precautions in [Appendix A](#).
- Determine the placement of each component in the rack before you install the rails.
- Install the heaviest server components at the bottom of the rack first and then work your way up.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges and voltage spikes and to keep your system operating in case of a power failure.
- Allow any drives and power supply modules to cool before touching them.
- When not servicing, always keep the front door of the rack and all covers/panels on the servers closed to maintain proper cooling.

## Rack Mounting Considerations

### *Ambient Operating Temperature*

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the room's ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (TMRA).

### *Airflow*

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

### *Mechanical Loading*

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

### ***Circuit Overloading***

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

### ***Reliable Ground***

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).



To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

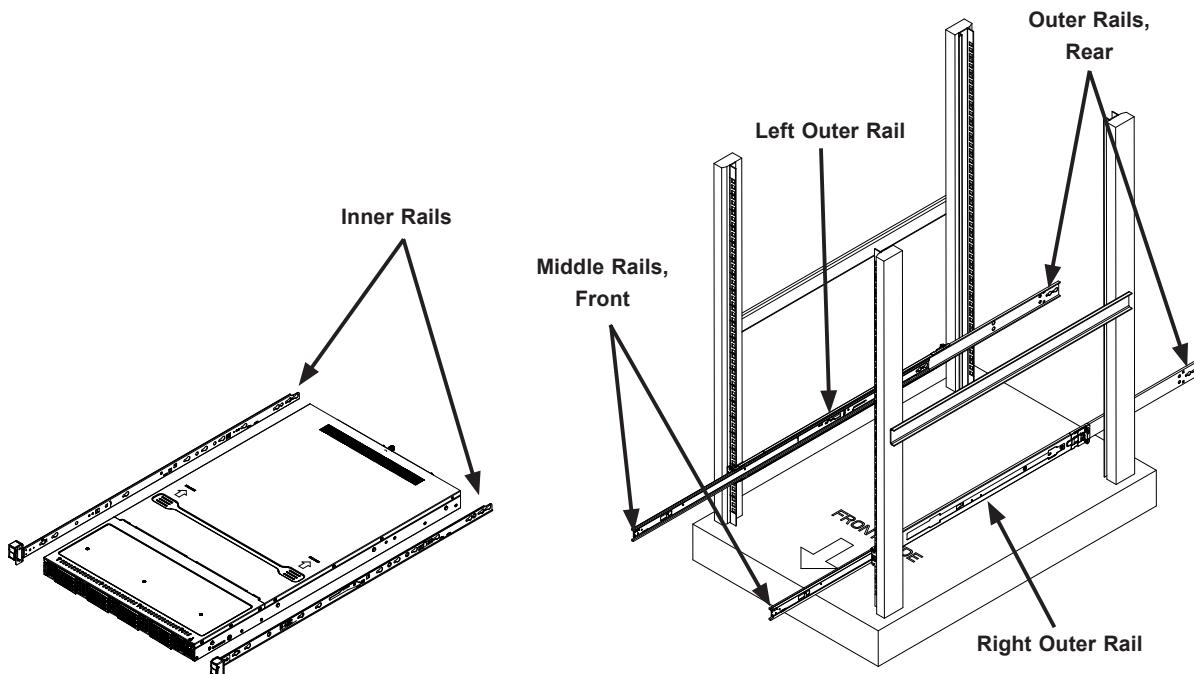
## 2.3 Installing the System into a Rack

This section provides information on installing the SC126E32 chassis into a rack unit with the quick-release rails provided. There are a variety of rack units on the market, which may mean the assembly procedure will differ slightly. You should also refer to the installation instructions that came with the rack unit you are using.

**Note:** This rail will fit a rack between 26.5" and 36.4" deep.

### Separating the Sections of the Rack Rails

The chassis package includes two rail assemblies in the rack mounting kit. Each assembly consists of three sections: An inner rail that secures directly to the chassis, an outer rail that secures to the rack, and a middle rail that slides in the outer rail. These assemblies are specifically designed for the left and right side of the chassis.



**Figure 2-1. Identifying the Inner Rails, Middle Rails and Outer Rails**

**Note:** Figures are for illustrative purposes only. Your actual chassis may differ. Always install servers into racks from the bottom up.



Slide rail mounted equipment is not to be used as a shelf or a work space.



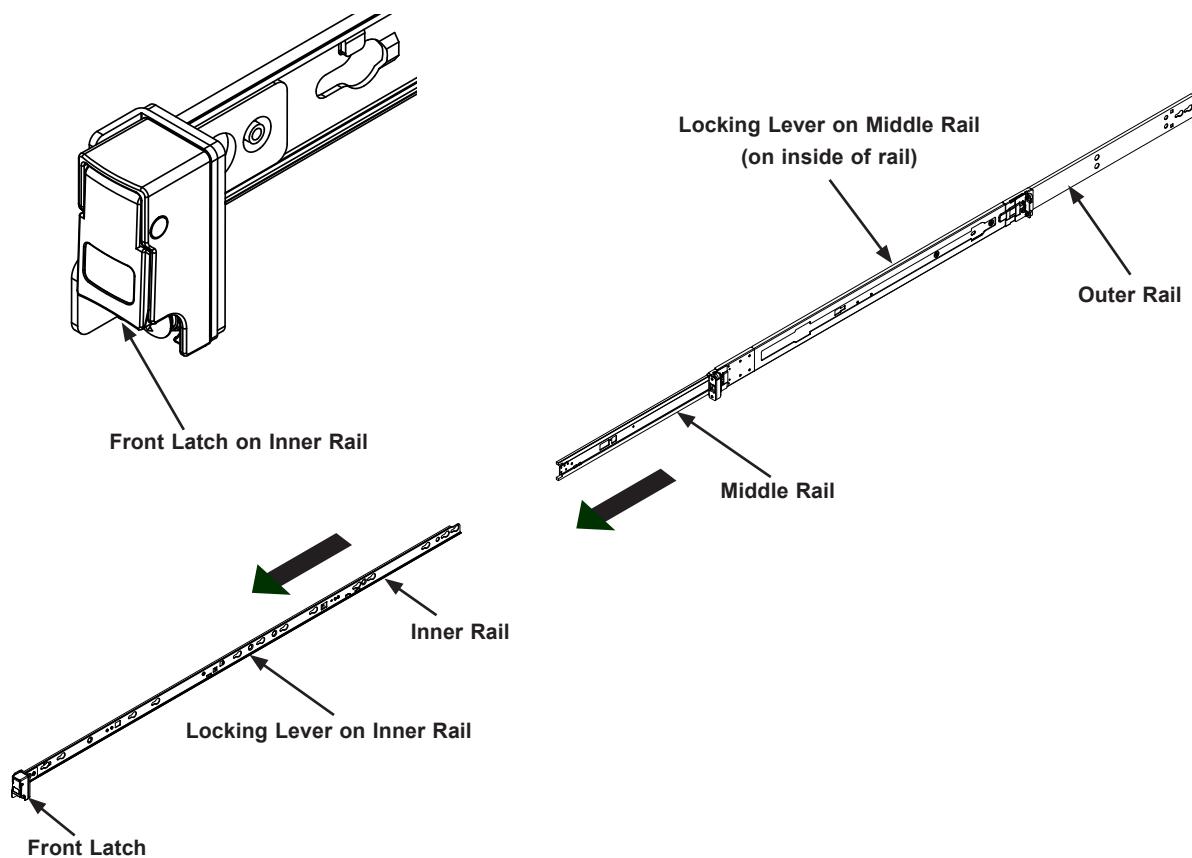
**Warning:** Do not pick up the server with the front handles. They are designed to pull the system from a rack only.

## Releasing the Inner Rail

It is necessary to release the inner rail from the middle and outer rails before installing the inner rail on the chassis.

### ***Releasing the Inner Rail from the Middle and Outer Rails***

1. Lift the front latch on the inner rail and pull the inner rail out of the middle rail, and the middle rail out of the outer rail until the rails are fully extended.
2. Press down the locking lever on the inside of the inner rail to release the inner rail.  
Continue to pull the inner rail out of the middle rail.



**Figure 2-2. Extending the Rails and Releasing the Inner Rail**



**Warning:** Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over.

## Installing the Inner Rails on the Chassis

### *Installing the Inner Rails*

1. Confirm that the left and right inner rails have been correctly identified.
2. Place the inner rail firmly against the side of the chassis, aligning the pins on the side of the chassis with the slotted thru holes in the inner rail.
3. Slide the inner rail toward the rear of the chassis until the pins are at the end of the narrow slot, which secures the inner rail to the chassis. An optional screw may be added for extra security.
4. Repeat for the other inner rail.

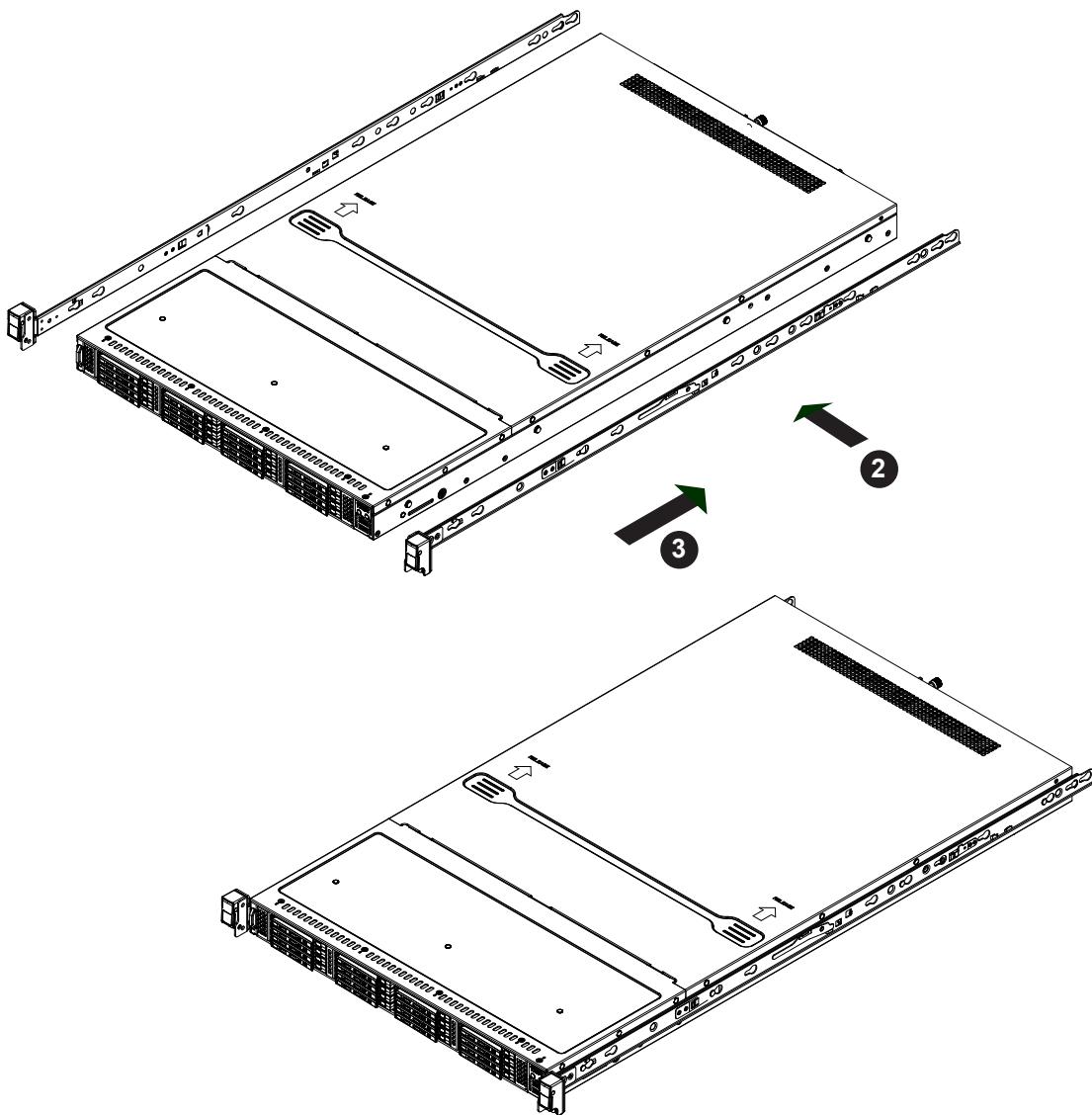


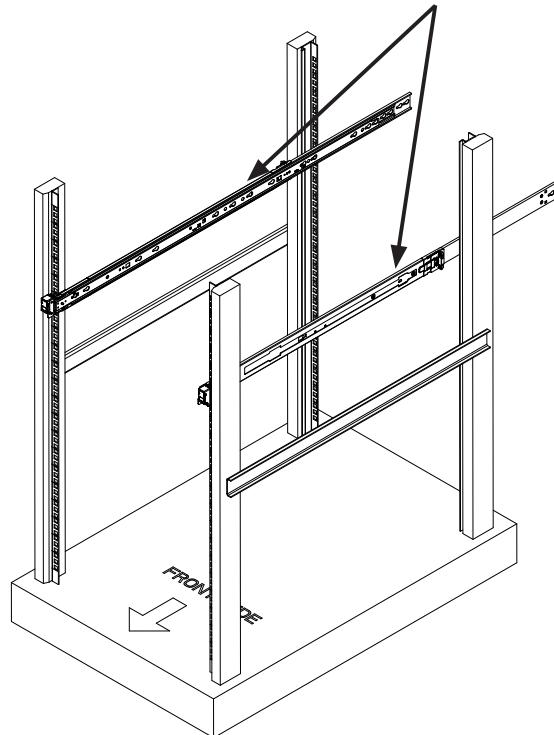
Figure 2-3. Installing the Inner Rails

## Installing the Outer Rails on the Rack

### *Installing the Outer Rails*

1. Confirm that the left and right outer rails have been correctly identified.
2. Release the small locking lever on the inside of the middle rail and push the middle rail back into the outer rail.
3. Insert the pins at the front of the outer rail into the square holes on the front of the rack. Push until the latch snaps into place.
4. The outer rail is actually two pieces that slide to lengthen. Pull out the rear of the outer rail, adjusting the length until the square pin assembly passes, then fits against the back of the rear post. Be careful to keep the rail level.
5. Insert the pins at the rear of the outer rail into the square holes on the rear of the rack. Push until the latch snaps into place.
6. Repeat for the other outer rail.

**Locking Lever on the Middle Rail**



**Figure 2-4. Installing the Outer Rails**

**Note:** Figures are for illustrative purposes only. Your actual chassis may differ. Always install servers into racks from the bottom up.

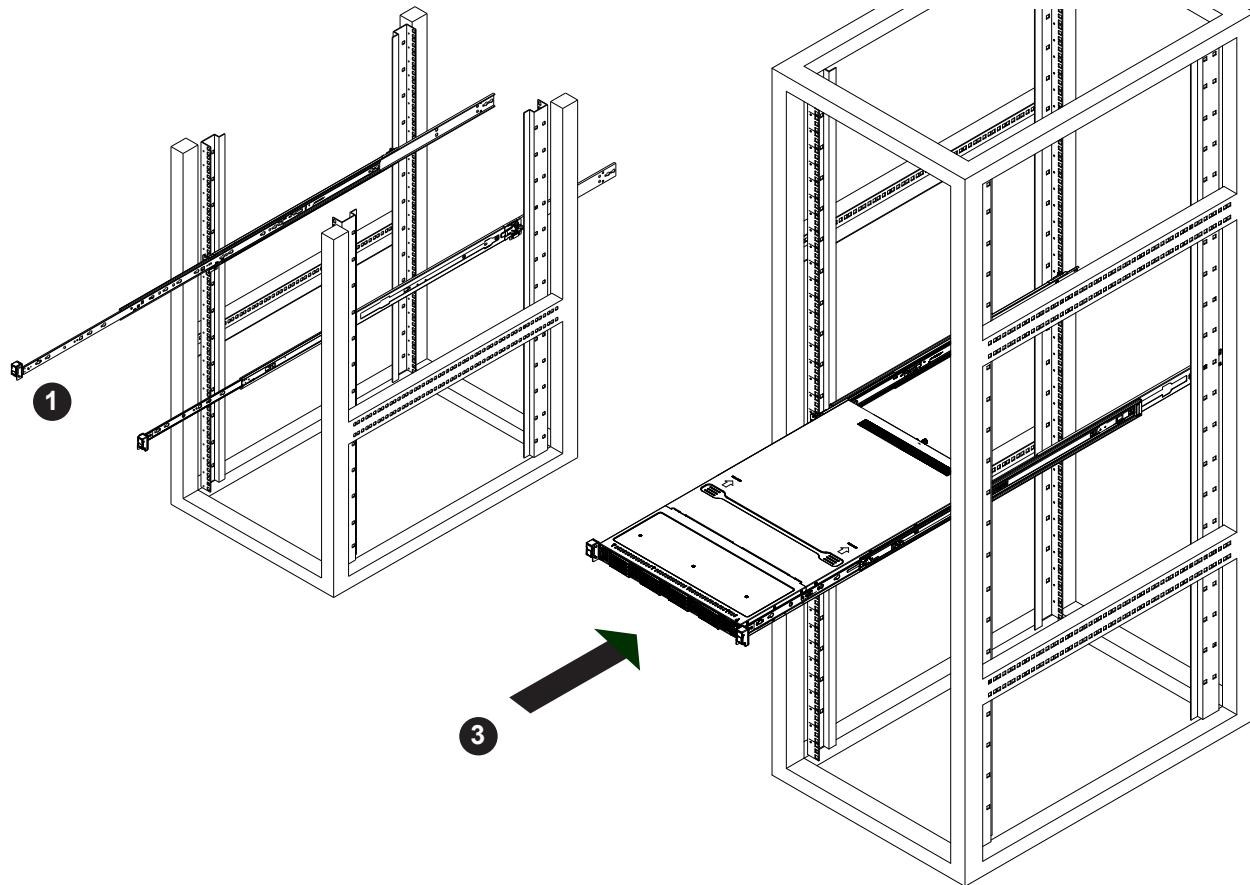
## Installing into the Rack

After the rails are installed on the chassis and on the rack, the server can be installed in the rack. It is heavy and requires two to three people to lift.

### *Installing the Chassis into a Rack*

1. Pull both middle rails out the front of the outer rail until each clicks to a stop.
2. Align the inner rails on the chassis with the front of the middle rails.
3. Slide the inner rails on the chassis into the middle rails, keeping the pressure even on both sides. When partially in, the locking levers will stop further progress.
4. Press down the locking levers on the inside of the inner rails and push the chassis all the way into the rear of the rack. The front latches will click into place.

The chassis is now mounted in the rack. It can be pulled partially out for service by lifting both front latches.



**Figure 2-5. Installing the Chassis into the Rack**

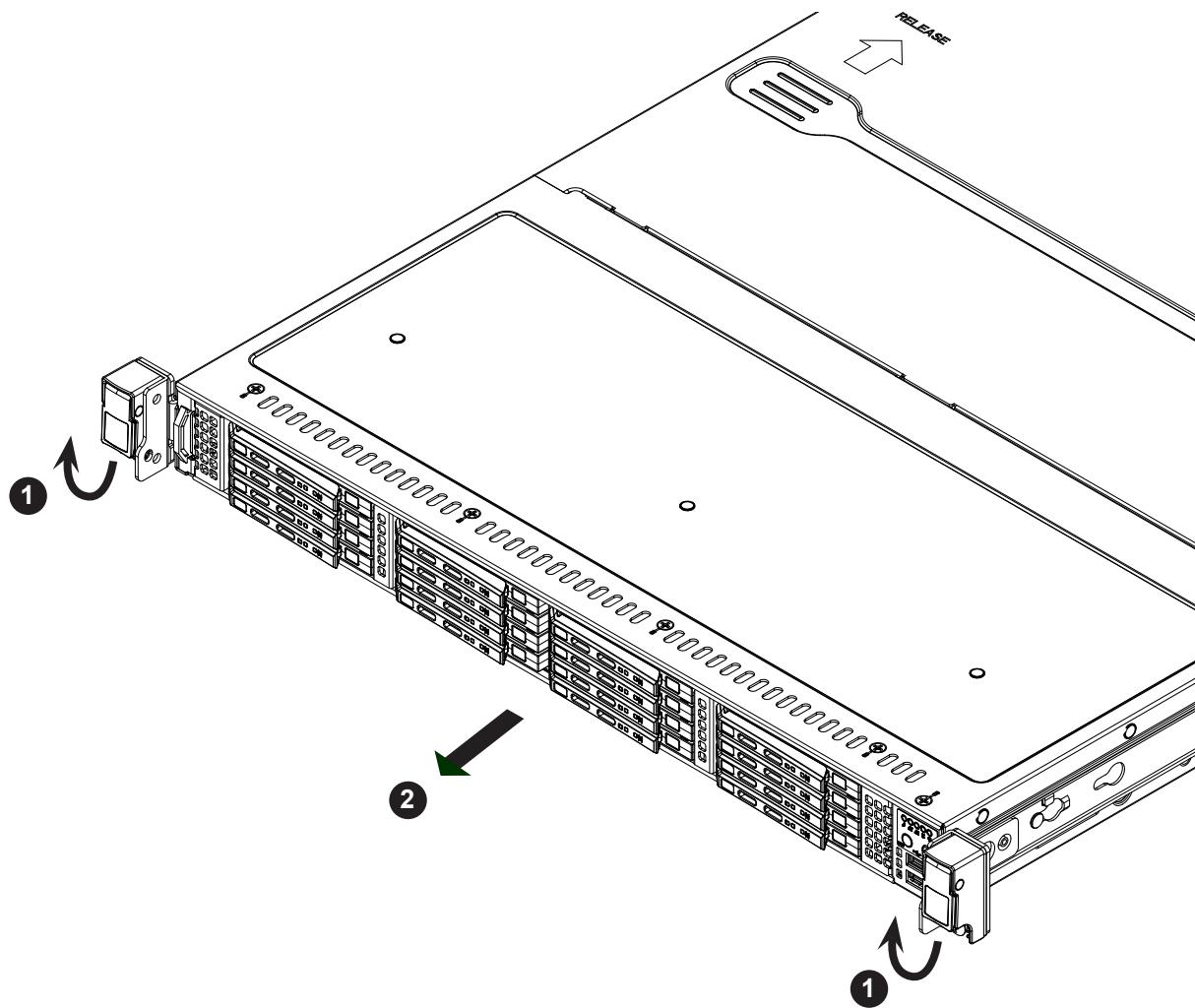
**Note:** Figures are for illustrative purposes only. Your actual chassis may differ. Always install servers into racks from the bottom up.

## Removing the Chassis from the Rack

**Caution:** The chassis is heavy and requires two to three people to lift it out.

### Removing the Chassis

1. Lift the right and left front latches on either side of the front panel.
2. Pull the chassis forward until it clicks to a stop.
3. Press down the locking lever on the inside of the inner rail (Figure 2-6) to release the chassis. Continue to pull the chassis out of the middle rails.



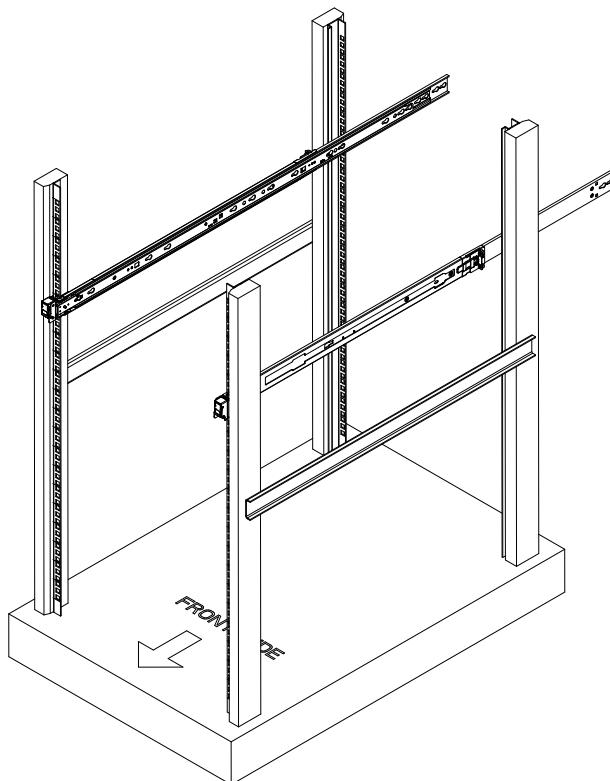
**Figure 2-6. Removing the Chassis from the Rack**

## Removing the Outer Rails from the Rack

In the uncommon event that it is necessary to remove the outer rails from the rack, follow these instructions. The chassis must be out of the rack.

### ***Releasing the Outer Rails***

1. On the front of the outer rail, slide the small plastic safety slider (red in drawing) up and hold it while pushing the plastic release button (green in drawing) just below it.
2. While holding the release button in, pull the outer rail forward to disengage the pins and the front of the rail from the rack.
3. Support the front of the outer and middle rail assembly while releasing the rear.
4. Remove the outer rail from the rear of the rack in the same way as the front. Slide the safety slider up and push and hold the release button, then pull the rear pins out of the rack and remove the rail.



**Figure 2-7. Removing the Outer Rails**

# Chapter 3

## Maintenance and Component Installation

This chapter provides instructions on installing and replacing main system components. To prevent compatibility issues, only use components that match the specifications and/or part numbers given.

Installation or replacement of most components requires that power first be removed from the system. Please follow the procedures given in each section.

### 3.1 Removing Power

Use the following procedure to ensure that power has been removed from the system. This step is necessary when removing or installing non-hot-swap components or when replacing a non-redundant power supply.

1. Use the operating system to power down the system.
2. After the system has completely shut-down, disconnect the AC power cord(s) from the power strip or outlet. (If your system has more than one power supply, remove the AC power cords from all power supply modules.)
3. Disconnect the power cord(s) from the power supply module(s).

## 3.2 Accessing the System

The chassis features two removable top covers for access to the internal components. When performing service on components inside the system, remove the system from the rack and place it on a work bench or desk. Do not service with the system extended from the rack.

### Removing the Top Covers

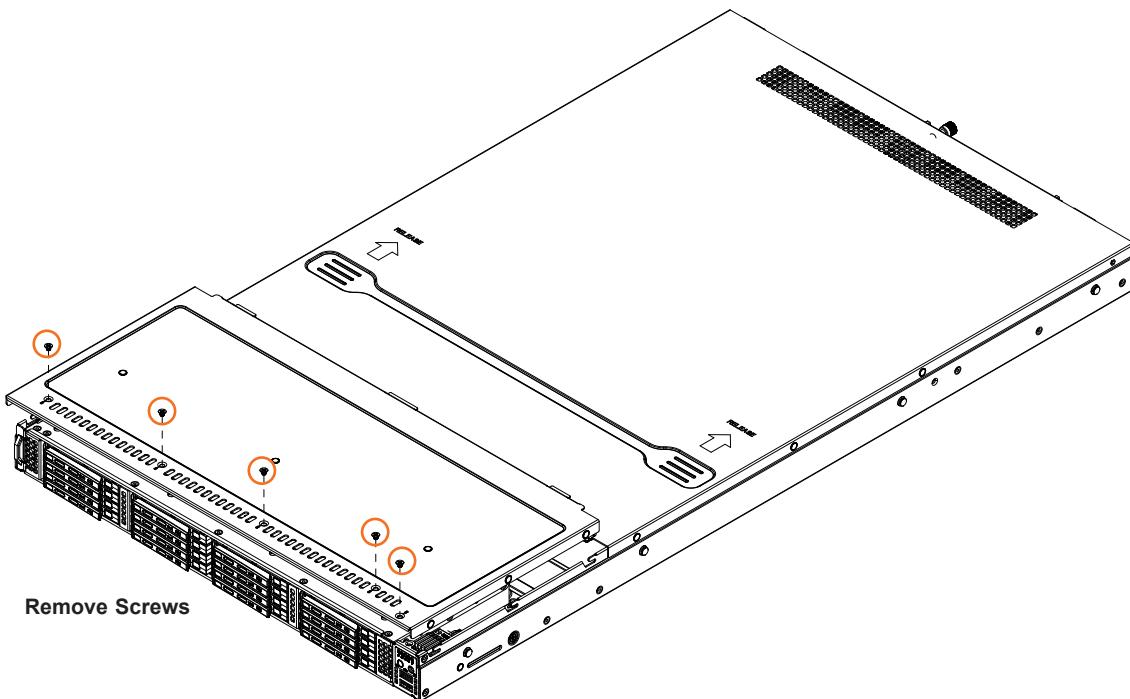
#### *Front Chassis Cover*

The front chassis cover can be removed to access the drive bays.

#### *Removing the Front Chassis Cover*

Remove the five screws securing the front side of the cover, then slide out and lift the cover.

**Warning:** Except for short periods of time, do not operate the server without the cover in place. The chassis cover must be in place to allow for proper airflow and to prevent overheating.



**Figure 3-1. Removing the Front Chassis Cover**

### Rear Chassis Cover

The rear chassis cover can be removed to access internal system components.

#### Removing the Rear Chassis Cover

Loosen the thumbscrew at the rear of the chassis. Press down on the area near the arrows. Slide the cover and lift off.

**Warning:** Except for short periods of time, do not operate the server without the cover in place. The chassis cover must be in place to allow for proper airflow and to prevent overheating.

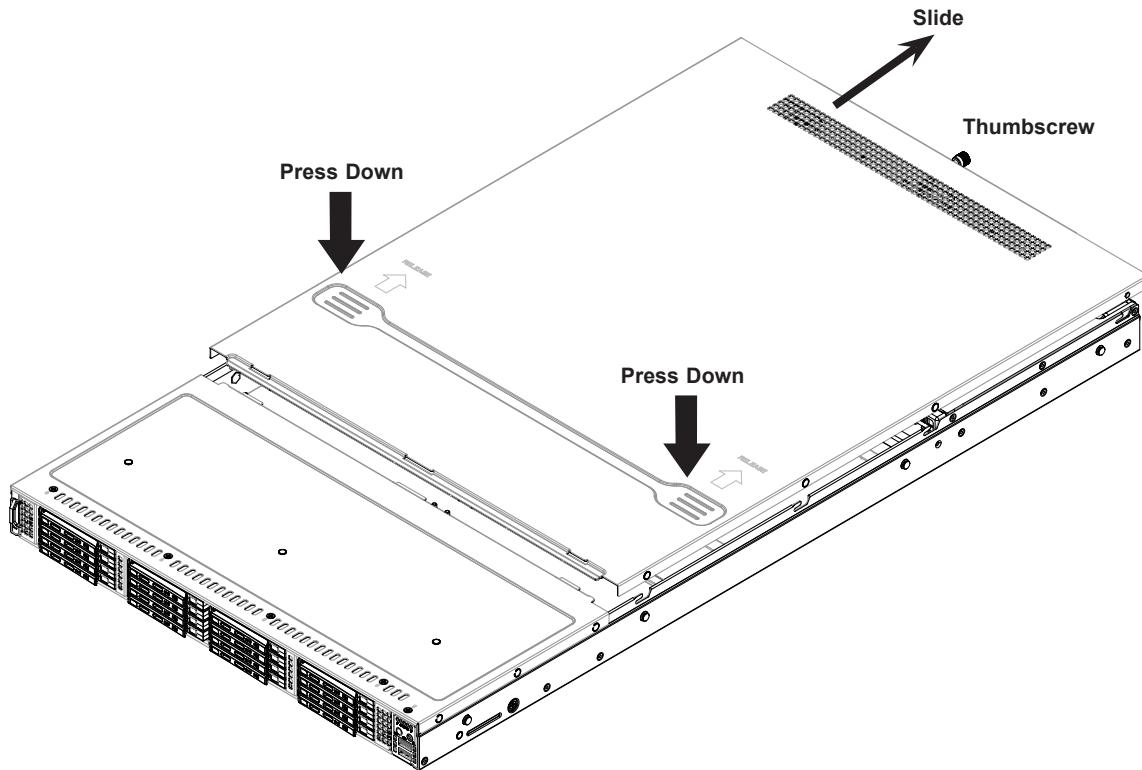


Figure 3-2. Removing the Rear Chassis Cover

### 3.3 Processor and Heatsink Installation

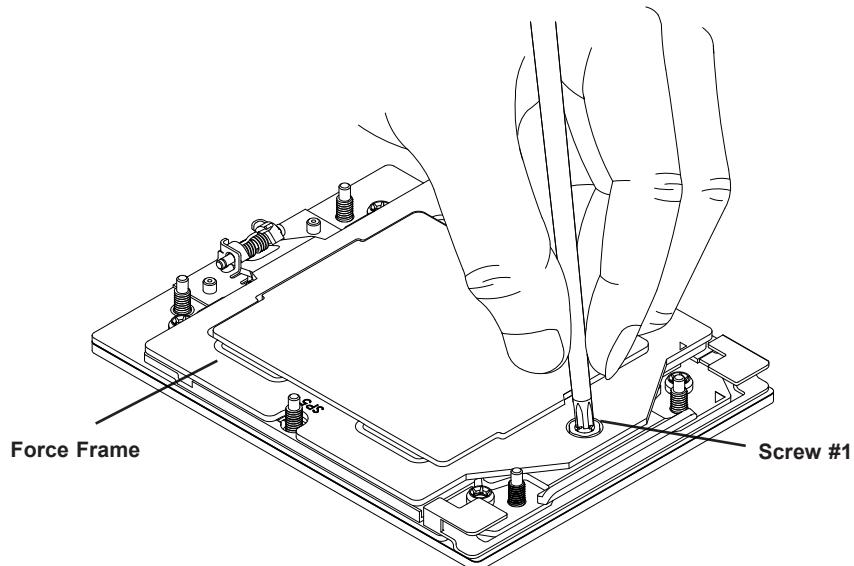
**Warning:** When handling the processor package, avoid placing direct pressure on the label area of the fan.

**Important:**

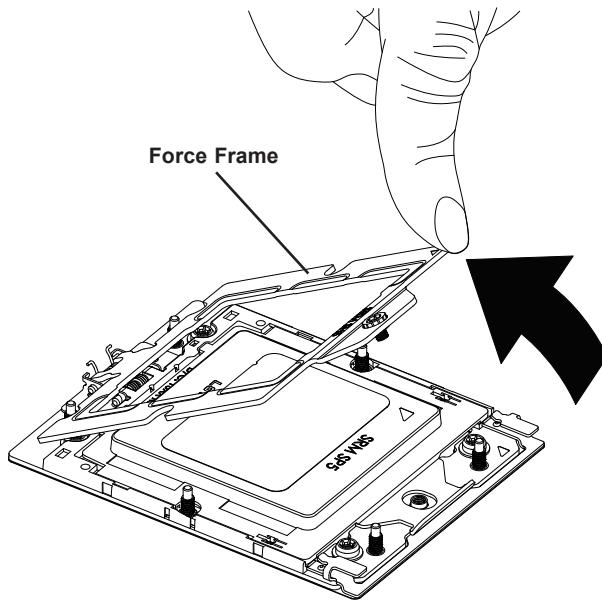
- For the Processor/Heatsink installation you need to use a T20 screwdriver when opening/closing the CPU socket.
- Always connect the power cord last, and always remove it before adding, removing or changing any hardware components. Make sure that you install the processor into the CPU socket before you install the CPU heatsink.
- If you buy a CPU separately, make sure that you use an AMD-certified multi-directional heatsink only.
- Make sure to install the motherboard into the chassis before you install the CPU heatsink.
- When receiving a motherboard without a processor pre-installed, make sure that the plastic CPU socket cap is in place and none of the socket pins are bent; otherwise, contact your retailer immediately.
- Refer to the Supermicro website for updates on CPU support.

***Installing the Processor and Heatsink***

1. Unscrew the screw #1 holding down the force frame.

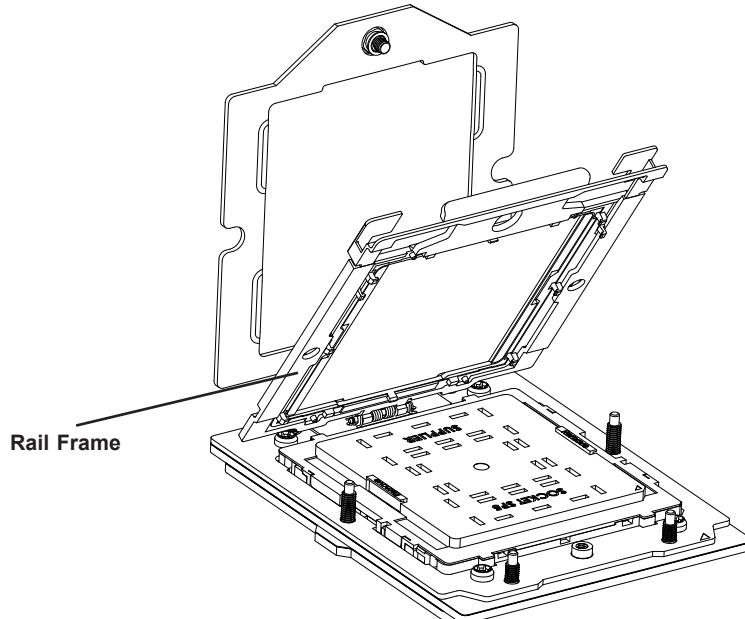


2. The spring-loaded force frame will raise up after the screw securing it (#1) is removed. Gently allow it to lift up to its stopping position.

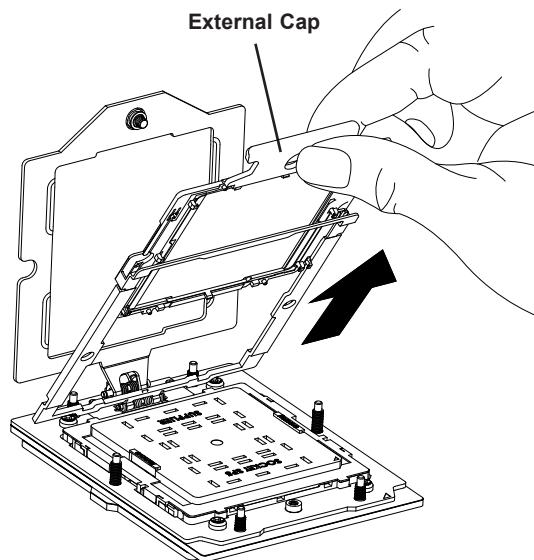


3. Lift the rail frame up by gripping the lift tabs near the front end of the rail frame. While keeping a secure grip of the rail frame, lift it to a position so you can do the next step of removing the external cap.

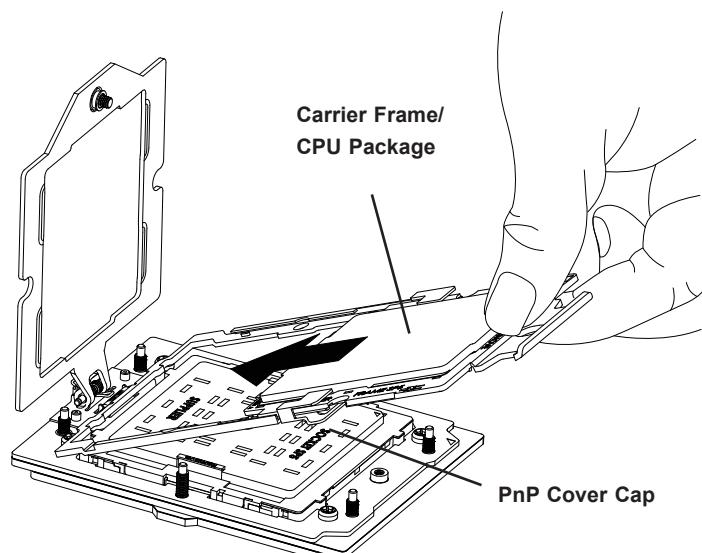
**Note:** The rail frame is spring loaded, so keep a secure grip on it as you lift it so it does not snap up.



4. Remove the external cap from the rail frame by pulling it upwards through the rail guides on the rail frame.

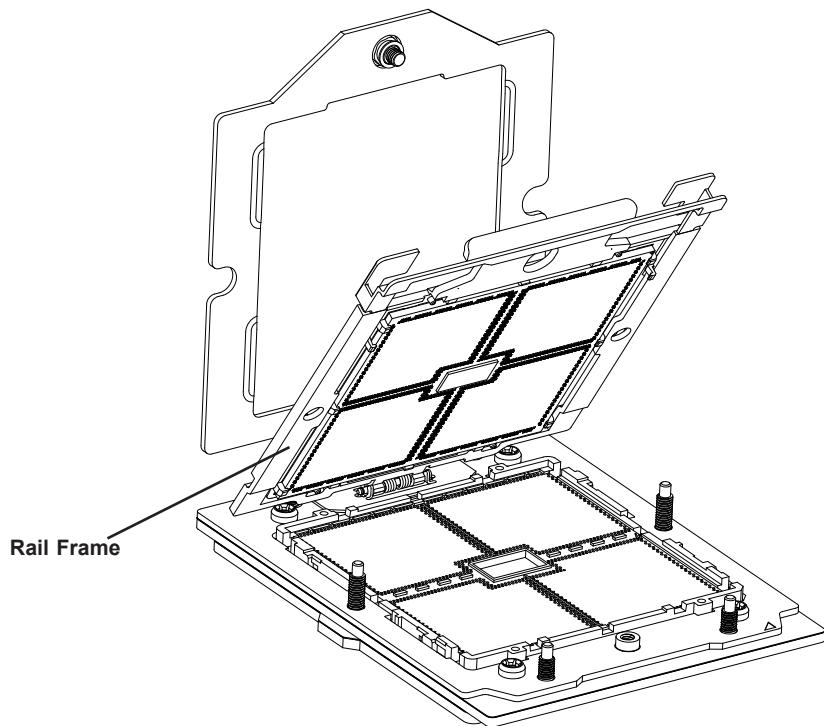


5. The CPU package is shipped from the factory with the carrier frame pre-assembled. Grip the handle of the carrier frame/CPU package assembly from its shipping tray, and while gripping the handle, align the flanges of the carrier frame onto the rails of the rail frame so its pins will be at the bottom when the rail frame is lowered later.
6. Slide the carrier frame/CPU package downwards to the bottom of the rail frame. Ensure the flanges are secure on the rails as you lower it downwards.



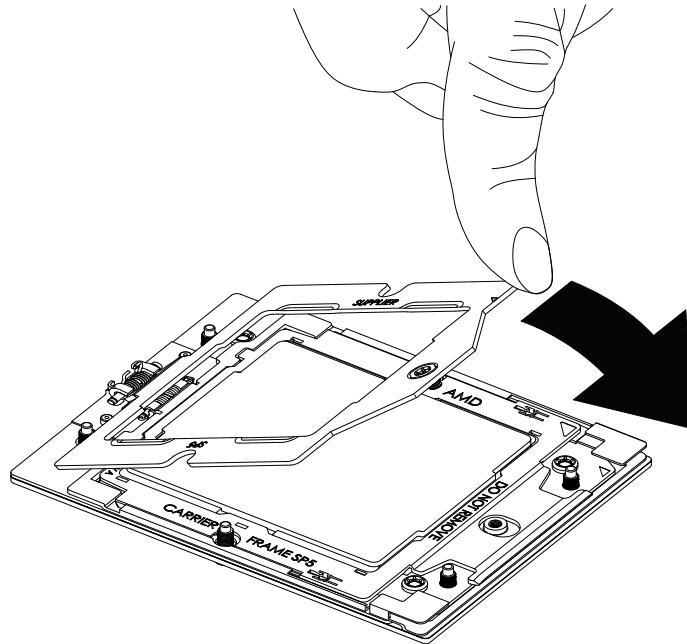
**Note:** You can only install the CPU inside the socket in one direction with the handle at the top. Make sure that it is properly inserted into the CPU socket before closing the rail frame plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the rail frame plate again, and double-check that the CPU is aligned properly.

7. Lift up the rail frame till it securely rests in upright position. Then remove the PnP cover cap from the CPU socket below. Grip the two lift tabs marked "Remove" at the middle of the cap and pull vertically upwards to remove the PnP cover cap.

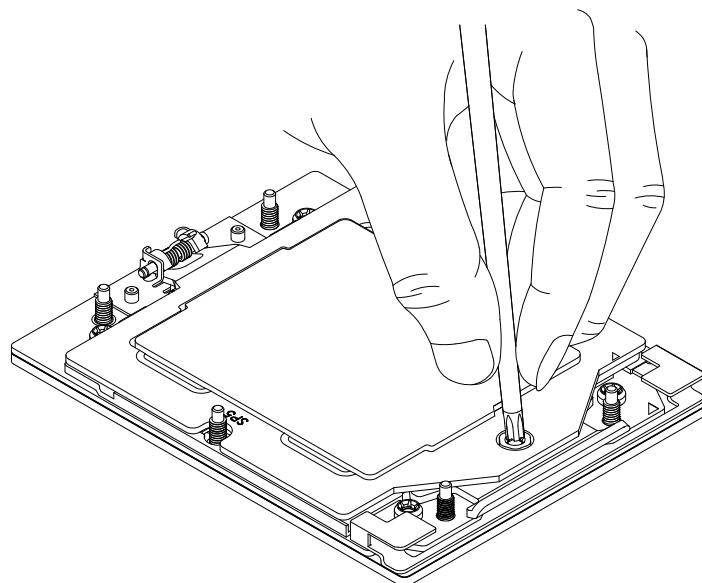


**Warning!** The exposed socket contacts are extremely vulnerable and can be damaged easily. Do not touch or drop objects onto the contacts and be careful removing the PnP cover cap and when placing the rail frame over the socket.

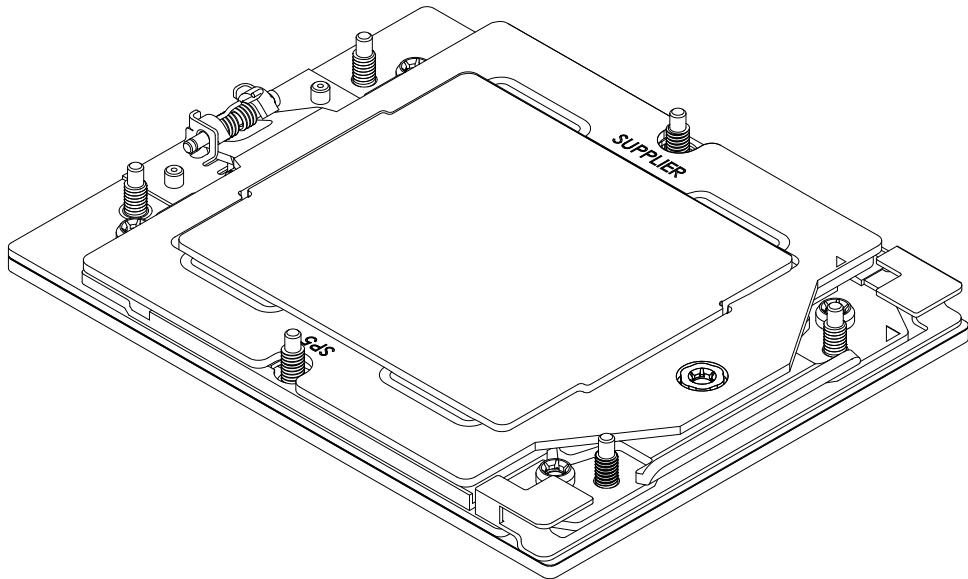
8. Gently lower the rail frame down onto the socket until the latches on the rail frame engage with the socket housing and it rests in place. DO NOT force it into place!



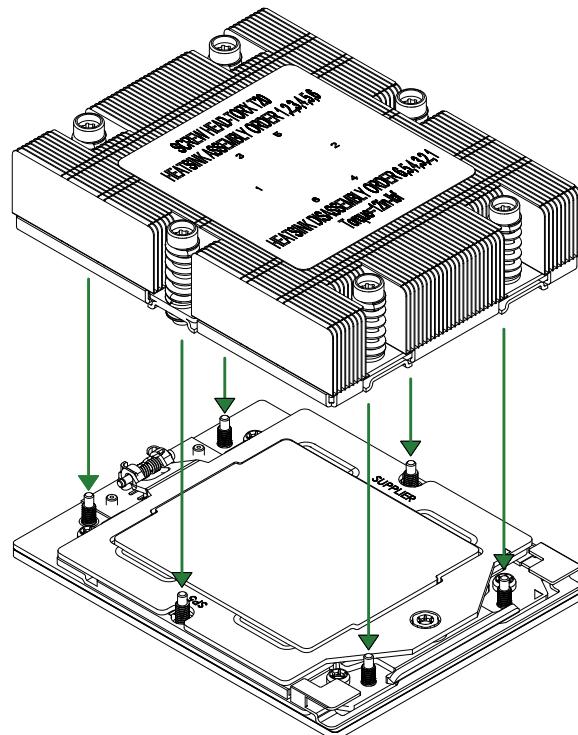
9. Note that the force frame is spring loaded and has to be held in place before it is secured. **Use a torque screwdriver, set it at 12.5~15.0 kgf-cm (10.85~13.01 lbf-in) with a Torx T20 screw head bit, to prevent damage to the CPU.**



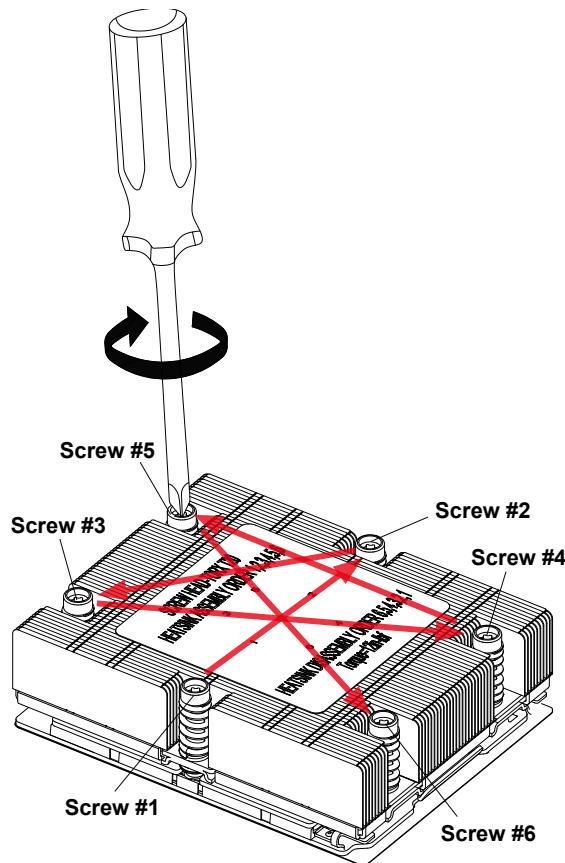
10. Replace and tighten the screws in the same order they were removed. When finished, the force frame will be secure over both the rail frame and CPU package.



11. After the force frame is secured and the CPU package is in place, now you must install the heatsink to the frame. Lower the heatsink down till it rests securely over the six screw holes on CPU package on the socket frame.



12. Using a diagonal pattern, tighten the six screws down on the heatsink in a clockwise fashion until secure. The heatsink will now be secured and you have finished installing the processor and heatsink onto the motherboard. Repeat this procedure for any remaining CPU sockets on the motherboard.



### Un-installing the Processor and Heatsink

1. Remove the heatsink attached to the top of the CPU package by reversing the installation procedure.
2. Clean the thermal grease left by the heatsink on the CPU package lid to limit the risk of it contaminating the CPU package land pads or contacts in the socket housing.
3. Unscrewing the plate and lift the force frame to the vertical position.
4. Lift the rail frame using the lift tabs near the front end of the rail frame. Note that the rail frame is spring loaded, so be careful lifting it up into a vertical position.
5. Grip the handle of the carrier frame and pull upwards to extract it from the rail frame. Return the carrier frame/CPU package to its original shipping container.
6. Grip the handle on the external cap and return it to the rail frame sliding it downwards till it rests in the frame.
7. Gripping the rail frame, rotate it downwards till it rests above and locks over the socket housing in its horizontal position.
8. Push and rotate down the force frame till it is over the external cap and rail frame into a horizontal position.
9. While holding down the force frame, secure it back to the socket frame by securing screw #1 in place.

## 3.4 Memory Support and Installation

**Note:** Check the Supermicro website for recommended memory modules.

**Important:** Exercise extreme care when installing or removing DIMM modules to prevent any possible damage.

### Memory Support

The H13SSF supports RDIMM / 3DS RDIMM in 24 DIMM slots. Up to 3 TB of ECC DDR5 4800 MT/s speed in 12 DIMM slots (1 DPC) or up to 6TB of ECC DDR5 4000 MT/s / 3600 MT/s speed in 24 DIMM slots (2 DPC). Refer to the table below for additional memory information.

**Note:** Check the Supermicro website for possible updates to memory support.

DIMM Population Guide (1 DPC)																									
Type	Channel																								
	F2	F1	E2	E1	D2	D1	C2	C1	B2	B1	A2	A1	G1	G2	H1	H2	I1	I2	J1	J2	K1	K2	L1	L2	
CPU & 1 DIMM											V														
CPU & 2 DIMM											V			V											
CPU & 4 DIMM								V			V			V				V							
CPU & 6 DIMM								V		V	V			V		V		V		V					
CPU & 8 DIMM				V				V		V	V			V		V		V		V				V	
CPU & 10 DIMM			V		V		V		V		V			V		V		V		V		V		V	
CPU & 12 DIMM	V		V		V		V		V		V			V		V		V		V		V		V	V

DIMM Population Guide (2 DPC)																								
Type	Channel																							
	F2	F1	E2	E1	D2	D1	C2	C1	B2	B1	A2	A1	G1	G2	H1	H2	I1	I2	J1	J2	K1	K2	L1	L2
CPU & 16 DIMM			V	V			V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
CPU & 20 DIMM			V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
CPU & 24 DIMM	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

Populating RDIMM/RDIMM 3DS DDR5 Memory Modules with AMD EPYC™ 9004 series Processor					
DIMM Type	DIMM Population		Maximum DIMM Capacity (GB)		Maximum Frequency (MT/s)
	DIMM1	DIMM2	1 Channel	12 Channels	
RDIMM	-	1R	32 GB	384 GB	4800
	1R	1R	64 GB	768 GB	4000
	-	2R	64 GB	768 GB	4800
	2R	2R	128 GB	1.5 TB	3600
3DS RDIMM	-	2SxR	128 GB	1.5 TB	4400
	-	2SxR	256 GB	3 TB	4400
	2SxR	2SxR	256 GB	3 TB	3600
	2SxR	2SxR	512 GB	6 TB	3600
For 3DS RDIMM	When x=2		DIMM Ranks = 4		
	When x=4		DIMM Ranks = 8		
	When x=8		DIMM Ranks = 16		

## DIMM Module Population Sequence

There is no specific order or sequence required when installing memory modules. However, do keep the following in mind:

- The blue slots must be populated first, follow the DIMM Population Guide.
- It is recommended that DDR5 DIMM modules of the same type, size, and speed should be installed.
- Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.
- The motherboard will support odd-numbered modules (1 or 3 modules installed). However, to achieve the best memory performance, fully populate the motherboard with validated memory modules.

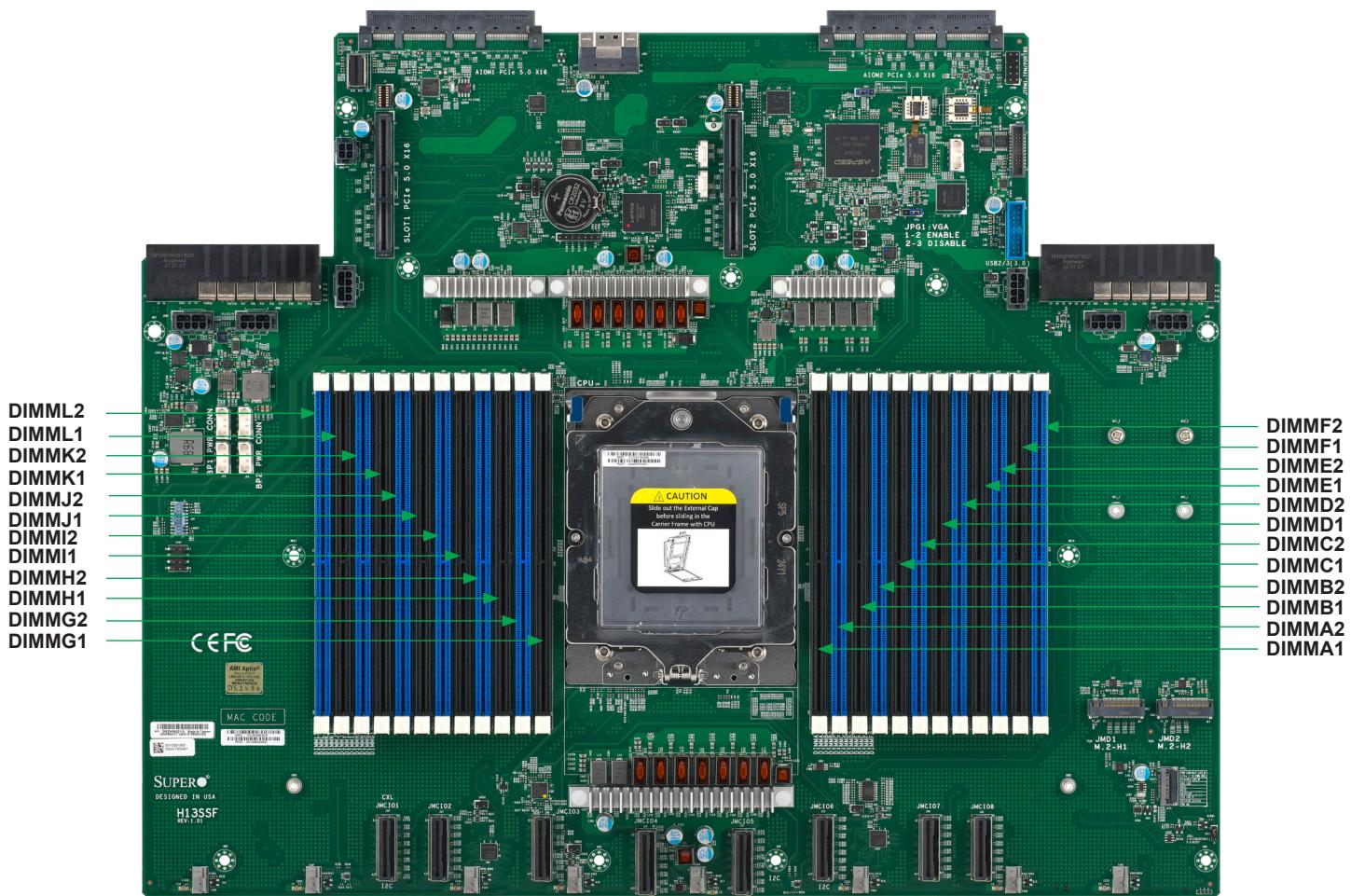
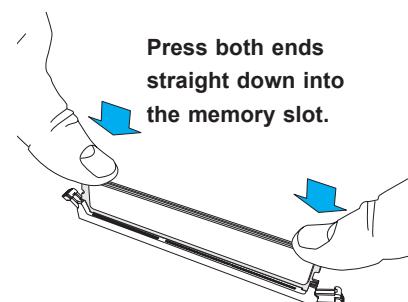
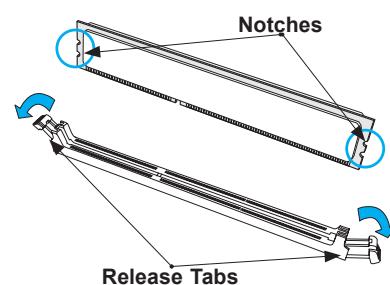
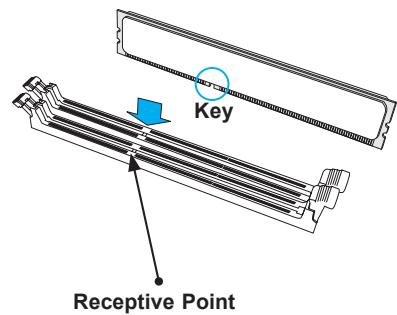


Figure 3-3. DIMM Numbering

## DIMM Installation

1. Insert the desired number of DIMMs into the memory slots. See [Memory Support](#) for details on memory population guidelines.
2. Push the release tabs outwards on both ends of the DIMM slot to unlock it.
3. Align the key of the DIMM module with the receptive point on the memory slot.
4. Align the notches on both ends of the module against the receptive points on the ends of the slot.
5. Press both ends of the module straight down into the slot until the module snaps into place.
6. Press the release tabs to the lock positions to secure the DIMM module into the slot.



## DIMM Removal

Press both release tabs on the ends of the DIMM module to unlock it. Once the DIMM module is loosened, remove it from the memory slot.

## 3.5 Motherboard Battery

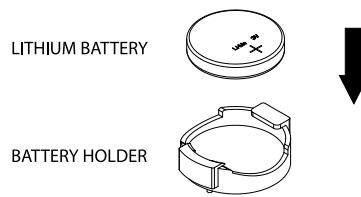
The motherboard uses non-volatile memory to retain system information when system power is removed. This memory is powered by a lithium battery residing on the motherboard.

### ***Replacing the Battery***

Begin by [removing power](#) from the system.

1. Push aside the small clamp that covers the edge of the battery. When the battery is released, lift it out of the holder.
2. To insert a new battery, slide one edge under the lip of the holder with the positive (+) side facing up. Then push the other side down until the clamp snaps over it.

**Note:** Handle used batteries carefully. Do not damage the battery in any way; a damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.



**Figure 3-4. Installing the Onboard Battery**

**Warning:** There is a danger of explosion if the onboard battery is installed upside down (which reverses its polarities). This battery must be replaced only with the same or an equivalent type recommended by the manufacturer (BR2032).

## 3.6 Storage Drives

The CSE-126E32-R1K62P chassis supports up to sixteen hot-swap E3.S (1T) 7.5 mm NVMe drives. They can be removed without powering down the system.

**Note:** Enterprise level solid state drives are recommended for use in Supermicro servers. For information on recommended drives, visit the Supermicro website.

### Drive Carriers

The drives are mounted in drive carriers to simplify their installation and removal from the chassis. These carriers also help promote proper airflow through the drive bays. Each drive carrier has two LED indicators.

#### *Removing Drive Carriers from the Chassis*

1. The drive carriers are accessible directly from the front of the chassis.
2. To remove the carrier, use the drive carrier lever as a handle to pull the lever and slide the drive carrier out of the chassis.

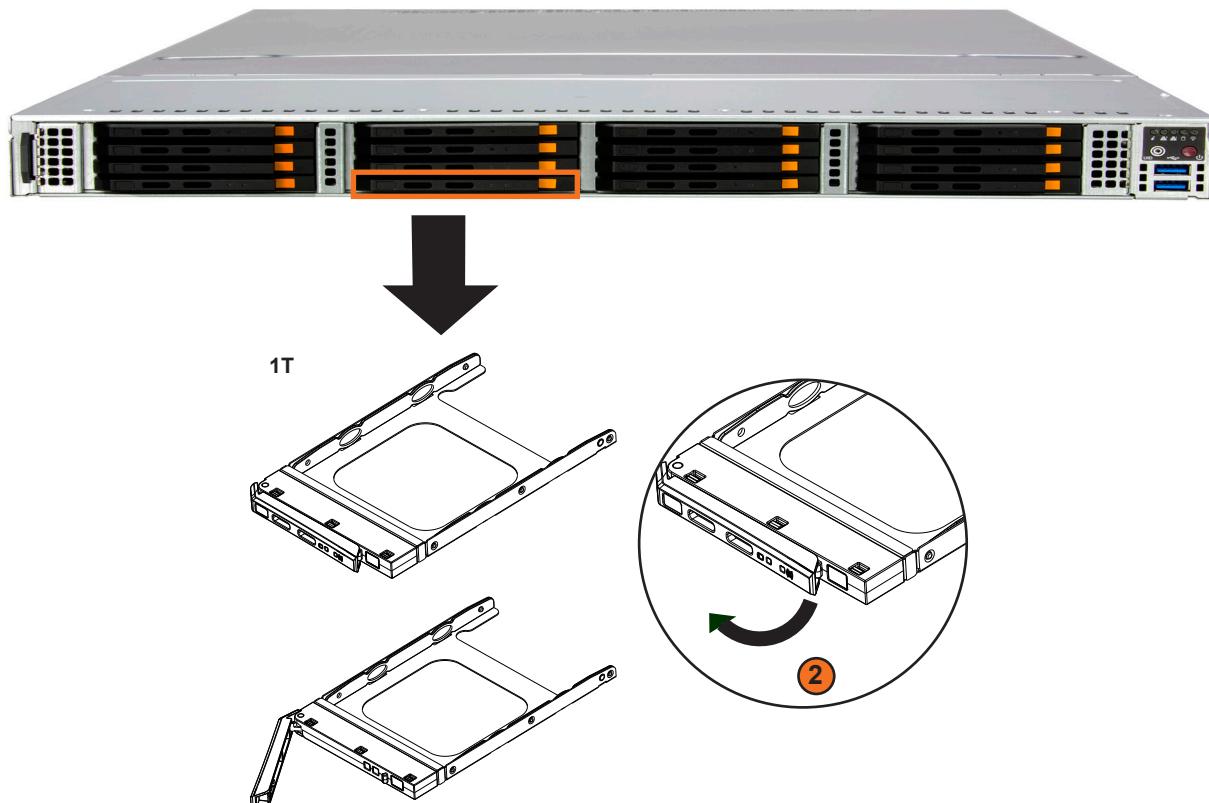
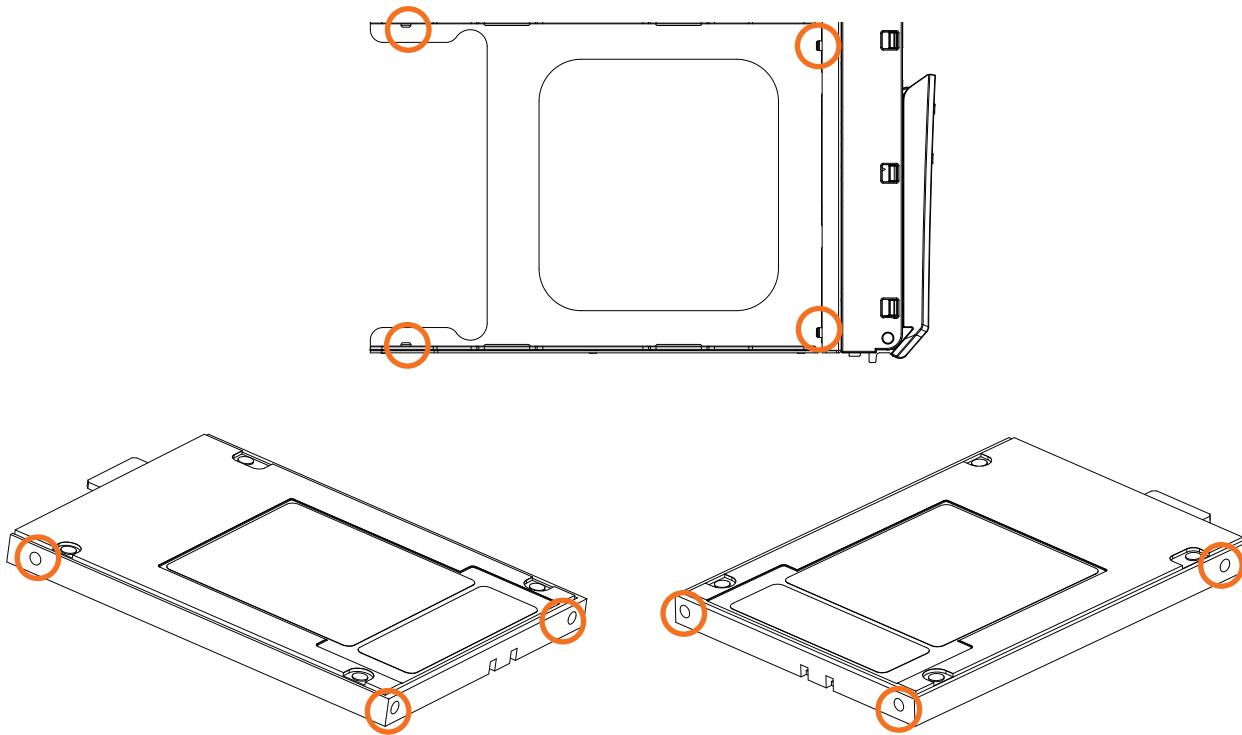


Figure 3-5. Removing a 1T Drive Carrier

### Drive Installation

1. The CSE-126E32-R1K62P chassis uses drive carriers to mount the solid state drives.
2. These drive carriers features four small stubs that will secure the SSD. These features are shown below.



3. To mount a solid state drive, insert the drive front in first (#1 as shown below), then push the rear in (#2). The stubs will snap into place securing the drive onto the drive carrier.

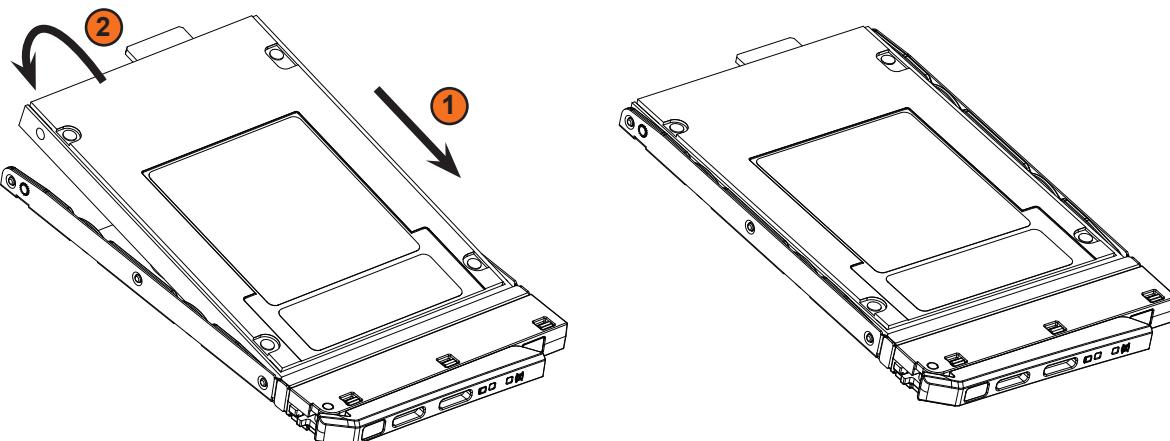
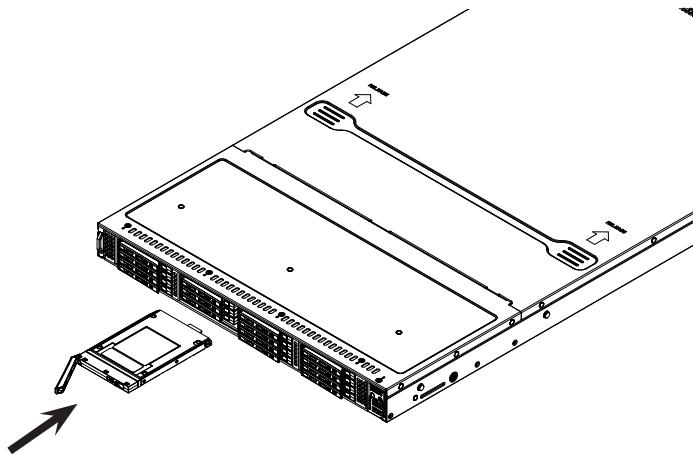


Figure 3-6. Installing a Solid State Drive into the Drive Carrier

4. Insert the drive and carrier into its bay. When the carrier reaches the rear of the bay, the release handle will retract.



5. Using the thumb, push the drive carrier handle until it clicks into the locked position.

**Caution:** Except for short periods of time, such as swapping drives, do not operate the server with the drive bays empty.

**Note:** Enterprise level drives are recommended for use in Supermicro chassis and servers.

## Backplane

### 1U16 Drive Backplane: BPN-E3S5-126ESN

Two BPN-E3S5-126ESN are included in the ASG-1115S-NE316R. Each backplane is a 1U 8-drive backplane that supports Gen 5 hot-swappable E3.S (7.5 mm) NVMe SSD drives. They are optimized backplanes that provide direct connection between the motherboard and NVMe SSD drives by way of MCIO Gen 5 cables.

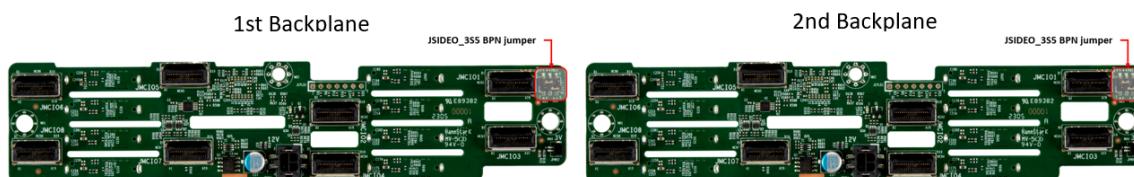


Figure 3-7. BPN-E3S5-126ESN Front View

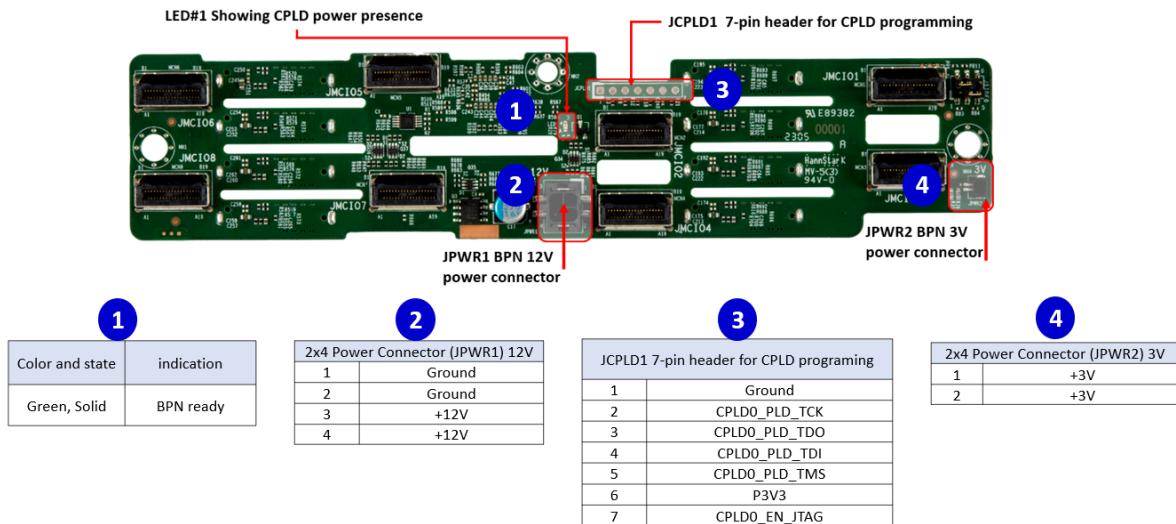


Figure 3-8. BPN-E3S5-126ESN Back View

E3.S LED Pattern			
Backplane LED	Blinking Pattern	Color and Pattern	Behavior for Device
Activity LED	Activity during I/O time	Green blinking	NVMe
	Power on/stay on	Green	NVMe
Status	Locate device	Amber blinking 4 Hz	NVMe
	Drive fault on	Amber	NVMe



	1st Backplane		2nd Backplane	
	BMC to CPLD I2C Slave Address Setting Table (Setting by <b>one 3-Pin Jumper cap</b> )	Jumper Cap Settings :	Jumper Cap Settings :	Jumper Cap Settings :
		Pin 2-4 select P3V3 source from M/B P12V(default) Pin 3-5 select P3V3 Source from M/B P3V3(option with specific Cable)		Pin 2-4 select P3V3 source from M/B P12V(default) Pin 1-3 select P3V3 Source from M/B P3V3(option with specific Cable)
		Jumper Cap Settings : Pin 3-5 Address is 0x60/C0/66		Jumper Cap Settings : Pin 1-3 Address is 0x68/C8/6E



## 3.7 System Cooling

### System Fans

Eight 4-cm heavy duty fans provide the cooling for the system. Fan speed is controlled by system temperature using the BMC. If a fan fails, the remaining fans will ramp up to full speed and the system will continue to operate. Replace any failed fan at your earliest convenience with the same type and model. Make sure the chassis top cover makes a good seal for proper air circulation.

#### *Replacing a System Fan*

1. Power down the system.
2. Remove the chassis from the rack and seat it on a work bench (safety area). Open the rear chassis cover as described earlier in this section.
3. Lift the fan housing of the failed fan from the chassis and pull it completely out of the chassis.
4. Replace the new fan into the space in the housing while making sure the arrows on the top of the fan (indicating air direction) point in the same direction as the arrows on the other fans.
5. Replace the fan housing containing the new fan into the chassis.
6. Re-install the rear chassis cover.

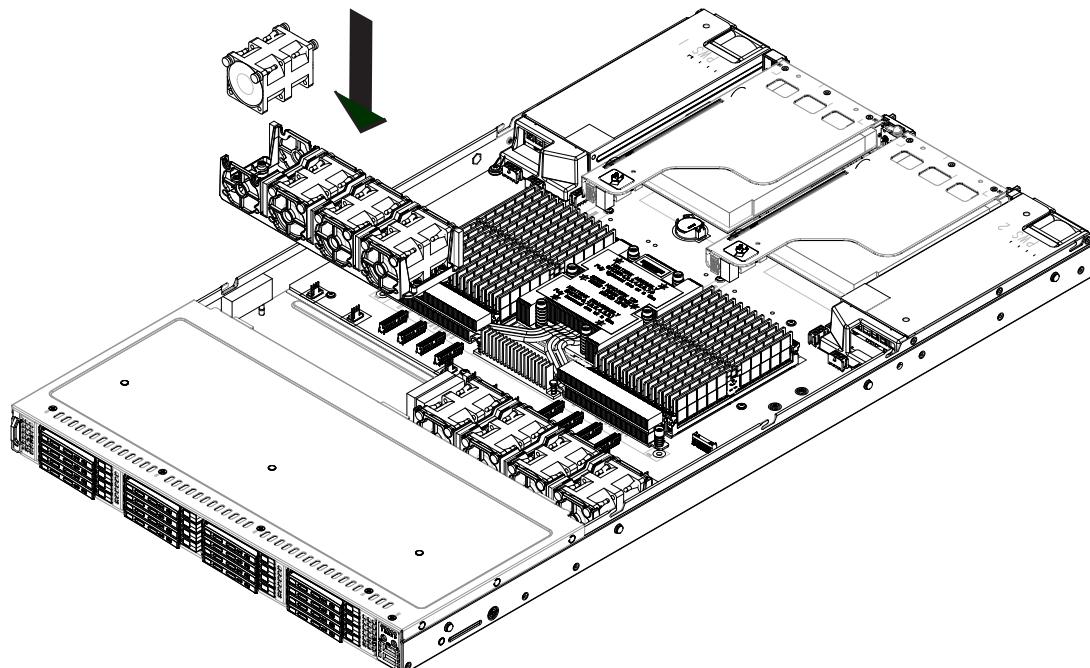


Figure 3-11. Placing a System Fan

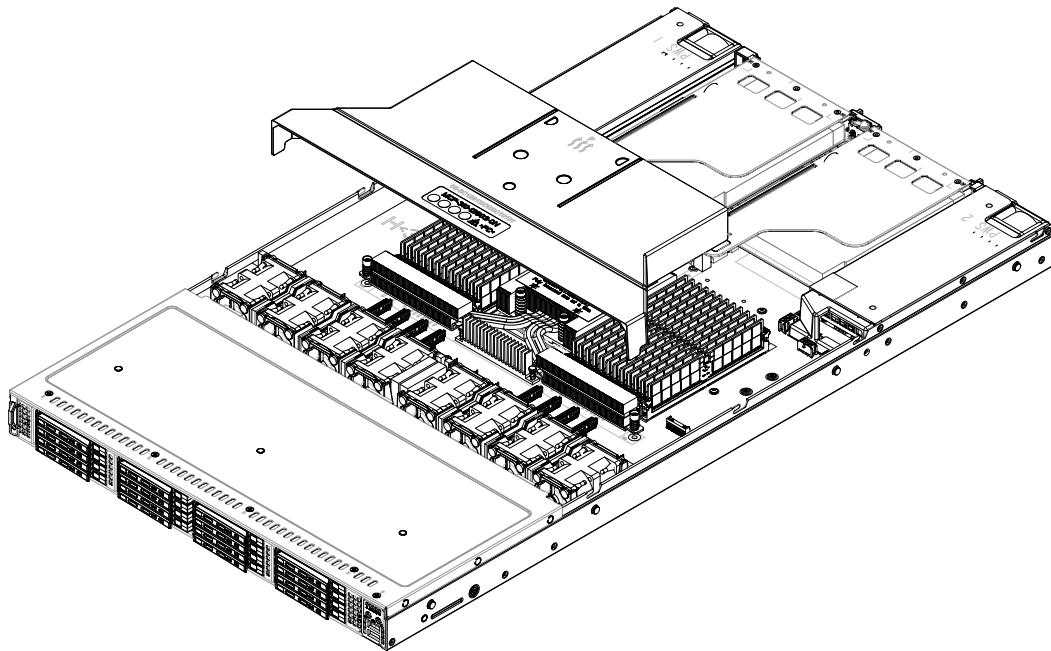
## Air Shroud

The air shroud concentrates airflow to maximize fan efficiency. The ASG-1115S-NE316R includes one air shroud for the CPU and the DIMMs.

### ***Installing Air Shroud***

One air shroud cools the DIMM slots controlled by the CPU (see the figure below).

1. Remove the system from the rack and remove the cover as described in [section 3.2](#).
2. Place the air shroud over the CPU-controlled DIMM slots, as illustrated below.
3. Close the cover and push the system back into the rack.



**Figure 3-12. Installing Air Shroud**

## 3.8 Expansion Cards

The ASG-1115S-NE316R includes two riser cards to support the use of expansion (add-on) cards.



Figure 3-13. Expansion Card Chassis Slots

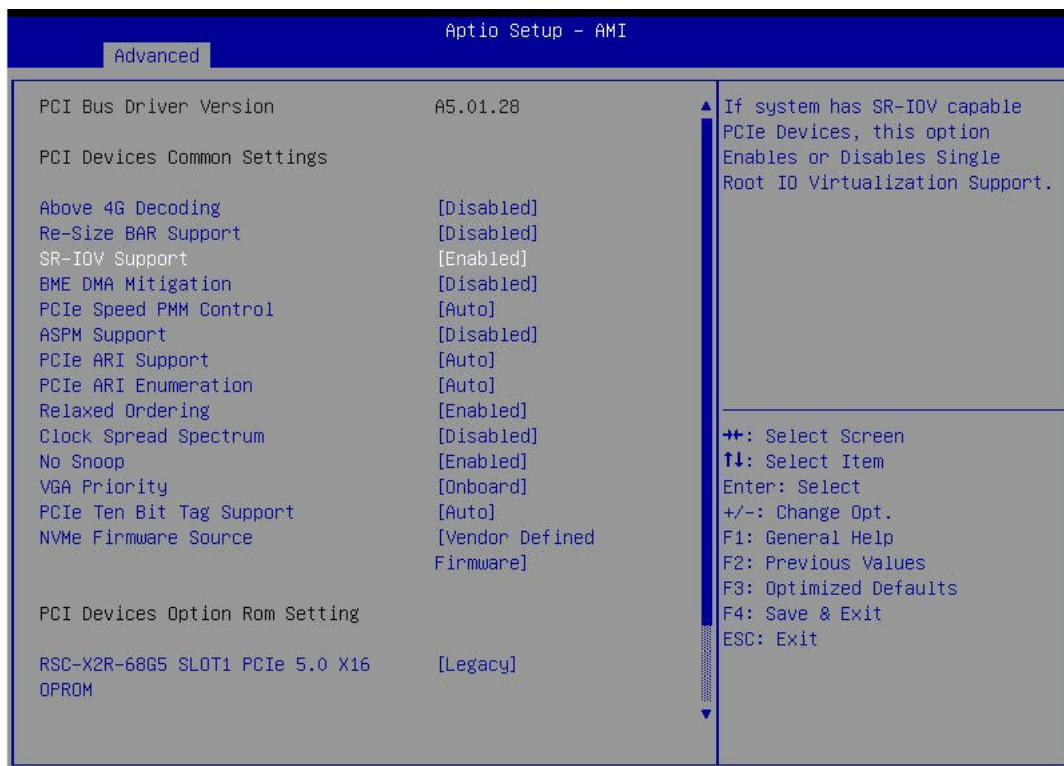
### Riser Cards

This system include riser cards that provide PCIe capabilities.

PCIe Slots per Riser Card			
Riser Card	Part Number	Slot	Description (all PCIe 5.0)
Right (from rear)	RSC-X-6G5	1	x16 Full-height half-length (FHHL)
Left (from rear)	RSC-X-6G5	2	x16 Full-height half-length (FHHL)

Full-height = 4.2", Low-profile = 2.5", Full-length = 10.5", Half-length = 6.6"

Go to BIOS > Advanced > PCIe/PCI/PnP Configuration > SR-IOV Support. Set the BIOS setting as shown to **Enabled**.

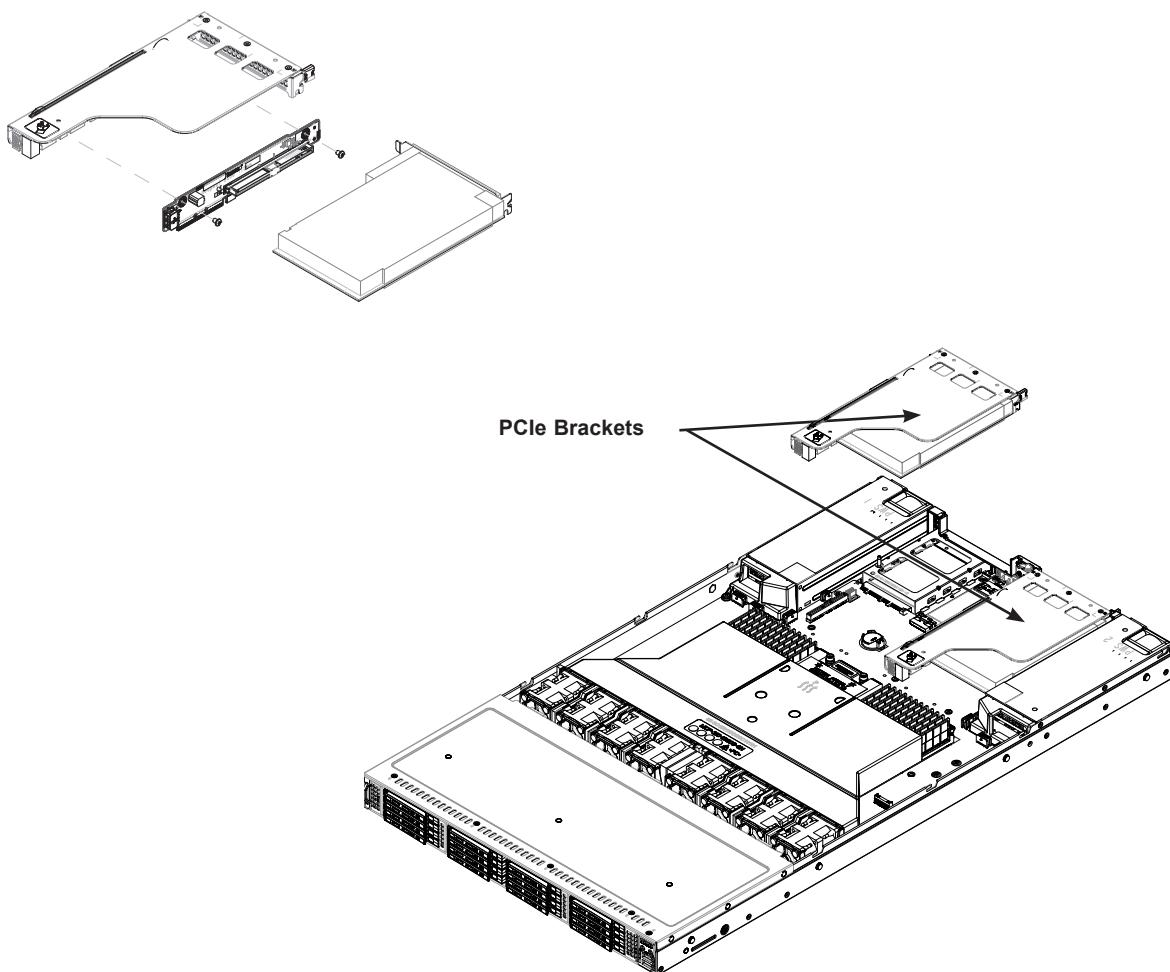


## Installing the PCIe Expansion Cards

The system provides two PCIe slots for full-height, half-length expansion cards.

### ***Installing Expansion Cards***

1. Power down the system and remove the rear cover as described earlier in this section.
2. Remove one of the two PCIe brackets from the rear of the chassis. There are no screws to remove.
3. Insert the PCIe expansion card into the bracket, as shown.
4. Replace the bracket with the installed expansion card into the PCIe slot.
5. Replace the cover and power up the system.



**Figure 3-14. Installing PCIe Expansion Cards**

## 3.9 AIOM Cards

### What is an OCP NIC card?

An OCP NIC, also known as an Open Compute Project Network Interface Card, is a type of network interface card designed according to the specifications and standards set forth by the Open Compute Project (OCP). The Open Compute Project is an initiative that aims to design and develop open hardware solutions for data centers and other computing environments.

An OCP NIC typically features a modular and open design, allowing for greater flexibility and interoperability within data center environments. These network interface cards are intended to be used in conjunction with OCP-compatible servers and networking equipment. OCP NICs are often optimized for high-performance, low-latency networking, and can support various network speeds such as 10 Gigabit Ethernet (10GbE), 25 Gigabit Ethernet (25GbE), 40 Gigabit Ethernet (40GbE), or higher.

### Installing an OCP Card

1. Power down the system as described earlier in this section.
2. Insert the OCP NIC card into an empty slot on the rear.

Tighten the small thumb screw that will secure the OCP NIC on the rear of the chassis. Do not over-tighten. The system supports up to one AIOM/OCP NIC 3.0 network port card.

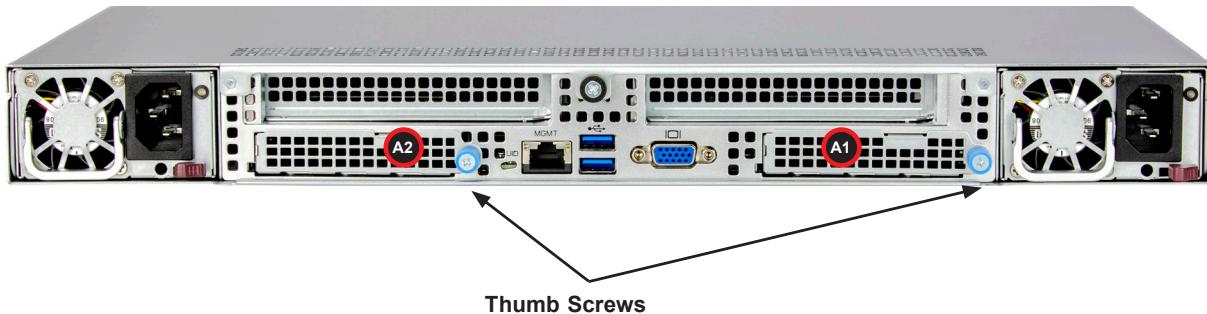
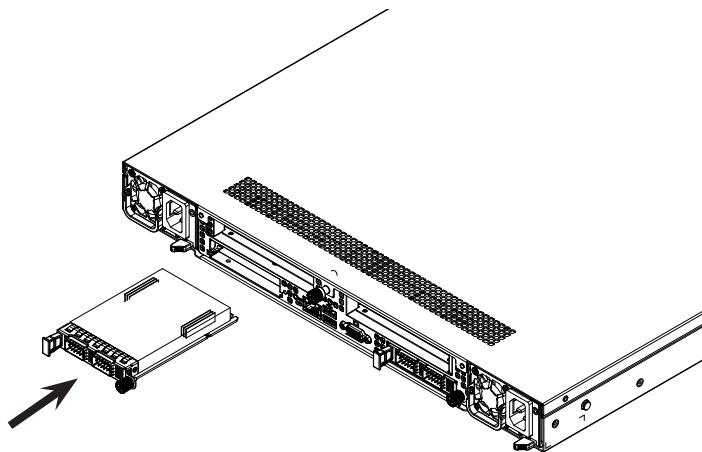


Figure 3-15. AIOM Chassis Slots

AIOM Configuration			
Slot	Mechanical	Electrical	Thermal
A1 A2	Small Form Factor, OCP 3.0	PCIe 5.0 x16	Up to 15W*

\*AIOM cards exceeding the 15W slot power envelope may require restricted conditions to meet thermal specification of the AIOM card. Contact your Supermicro account representative for more information.



**Figure 3-16. Inserting the OCP NIC**

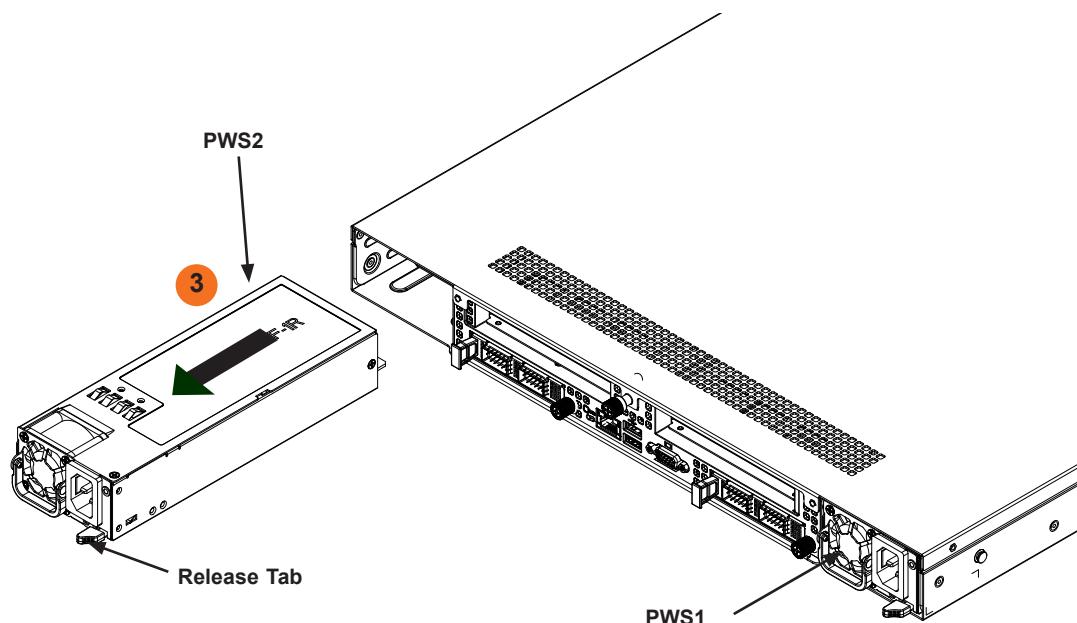
## 3.10 Power Supply

The chassis features redundant 1600 Watt power supplies. The power modules can be changed without powering down the system. New units can be ordered directly from Supermicro or authorized distributors.

These power supplies are auto-switching capable. This feature enables them to automatically sense the input voltage and operate at a 100-120v or 180-240v. An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.

### ***Changing the Power Supply***

1. Unplug the AC cord from the module to be replaced.
2. Push the release tab on the back of the power supply as illustrated.
3. Pull the power supply out using the handle provided.



**Figure 3-17. Power Supply Release Tab**

4. Replace the failed power module with the same model.
5. Push the new power supply module into the power bay until it clicks.
6. Plug the AC power cord back into the module.

# Chapter 4

## Motherboard Connections

This section describes the connections on the motherboard and provides pinout definitions. Note that depending on how the system is configured, not all connections are required. The LEDs on the motherboard are also described here. A motherboard layout indicating component locations may be found in [Chapter 1](#). More detail can be found in the [Motherboard Manual](#). Please review the Safety Precautions in [Appendix A](#) before installing or removing components.

### 4.1 Power Connections

#### 12 V 8-pin Auxiliary Power Connector (JPW1-2, 4-7)

JPW1-2 and 4-7 are 8-pin Micro-Hi power input to provide power to GPU. Refer to the table below for pin definitions.

12 V 8-pin Power Connector Pin Definitions			
Pin#	Definition	Pin#	Definition
1	Ground	5	+12 V
2	Ground	6	+12 V
3	Ground	7	+12 V
4	Ground	8	+12 V

#### 12 V 4-pin Auxiliary Power Connector (JPW3)

JPW3 is a 4-pin auxiliary backplane power connector. Refer to the table below for pin definitions.

12 V 4-pin Power Connector Pin Definitions	
Pin#	Definition
1	Ground
2	Ground
3	+12 V
4	+5 V AUX

### 3.3 V 4-pin Backplane Power Connector (JP4 and JP6)

JP4 and JP6 are 4-pin power input to provide power to the backplane JPWR2. Refer to the table below for pin definitions of JP4 and JP6.

3.3 V 4-pin Power Connector Pin Definitions	
Pin#	Definition
1	+3 V
2	+3 V
3	Ground
4	Ground

## 4.2 Headers and Connectors

### Headers

#### NC-SI Connector

A Network-Controller Sideband Interface (NC-SI) header is located at JNCSI1 on the motherboard. The NCSI header is used to connect a Network Interface Card (NIC) to the motherboard so that the BMC is able to poll the temperature reading from it.

#### TPM/Port 80 Header

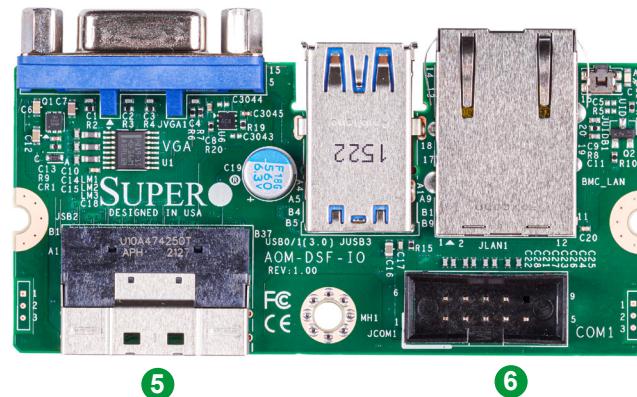
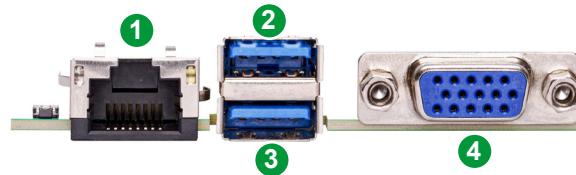
A Trusted Platform Module (TPM)/Port 80 header is located at JTPM1 to provide TPM support and Port 80 connection. Use this header to enhance system performance and data security. Refer to the table below for pin definitions. Please go to the following link for more information on the TPM: <http://www.supermicro.com/manuals/other/TPM.pdf>.

Trusted Platform Module Header Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+3.3 V	2	SPI_CS#
3	RESET#	4	SPI_MISO
5	SPI_CLK	6	GND
7	SPI_MOSI	8	NC
9	3.3 V Stby	10	SPI_IRQ#

## 4.3 Input/Output Ports

### I/O Ports

The low-profile slimSAS I/O connector, located at JSB1 on the motherboard connects to JSB2 on AOM-DSF-IO (#5) to provide VGA/COM/BMC/USB/IO connections.



I/O Ports from AOM-DSF-IO	
#	Description
1	BMC_LAN Port
2	USB 0 (3.0)
3	USB 1 (3.0)
4	VGA Port
5	I/O Connector
6	COM Port Header

### I/O Module Connection

BMC LAN port, VGA, USB, IO connector, and COM port module header is located on the AOM-DSF-IO.

## 4.4 LED Indicators

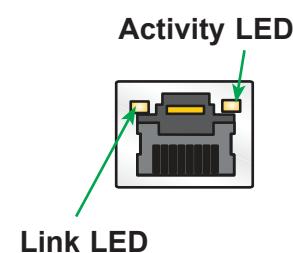
### BMC LAN Port LEDs

A dedicated BMC LAN is located on the rear I/O panel and has two LED indicators. The LED on the right indicates connection and activity, while the LED on the left indicates the speed of connection. The Link LED may be amber, green, or off to indicate the speed of the connection. Refer to the tables below for more information.

Link LED, Connection Link Speed Indicator	
LED Color	Definition
Amber	1 Gb/s
Green	100 Mb/s
Off	10 Mb/s

Activity LED		
Color	State	Definition
None	No Connection	
Yellow	Solid On	Link
Yellow	Flashing	Active



### UID LED Indicator (LED4)

The rear LED8 is located next to the UID switch. The front UID LED is located on the front panel. When you press the UID switch, both rear LED8 and front UID LED indicators will turn on. Press the UID switch again to turn off the LED indicators. Use this UID Indicator to 'mark' the system, so the system can be easily identified whether on the front or back (e.g., a system rack with multiple units installed).

UID LED Indicator		
Color	State	Definition
None	Off	UID Off
Blue	Solid On	Unit Identified by Local Site
Blue	Slow Blinking	Unit Identified by Remote Site
Blue	Slow Blinking	System Recovery

### BMC Heartbeat LED (LED1)

A BMC Heartbeat LED is located at LED1 on the motherboard. When LED1 is blinking, the BMC is functioning normally. See the table below for more information.

BMC Heartbeat LED State		
Color	State	Definition
Green	Solid On	BMC is not ready
Green	Blinking	BMC Normal
Green	Fast Blinking	BMC: Initializing

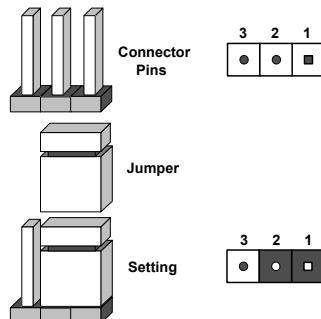
60

## 4.5 Jumpers

### Explanation of Jumpers

To modify the operation of the motherboard, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. See the diagram below for an example of jumping pins 1 and 2. Refer to the motherboard layout page for jumper locations.

**Note:** On two-pin jumpers, "Closed" means the jumper is on, and "Open" means the jumper is off the pins.



### UID LED and BMC\_Reset Button Select Jumper

Jumper JRU1 is used in conjunction with Pin 2 of Front Control Panel header 1 (JFP1) to function as a BMC\_Reset button or a UID LED button. To configure Pin 2 of JFP1 for front UID button use in a chassis that supports front UID connection, close Pins 1 and 2 of jumper JRU1. To set Pin 2 of JFP1 for BMC reset support, close Pins 3 and 4 of jumper JRU1. Please refer to the table below for more information on JRU1.

Front UID Switch/Reset Button Select Jumper (JRU1) Jumper Settings	
State	Description
Close Pin 1 and Pin 2 of JRU1	Pin 2 of JFP1: used for front UID switch support ( <b>Default</b> )
Close Pin 3 and Pin 4 of JRU1	Pin 2 of JFP1: used for BMC Reset support

# Chapter 5

## Software

After the hardware has been installed, you can install the Operating System (OS), configure RAID settings and install the drivers.

### 5.1 Microsoft Windows OS Installation

If you will be using RAID, you must configure RAID settings before installing the Windows OS and the RAID driver. Refer to the RAID Configuration User Guides posted on our website at [www.supermicro.com/support/manuals](http://www.supermicro.com/support/manuals).

#### *Installing the OS*

1. Create a method to access the Microsoft Windows installation ISO file. That can be a USB flash or media drive.
2. Go to the Supermicro web page for your motherboard and click on "Download the Latest Drivers and Utilities", select the proper driver, and copy it to a USB flash or media drive.
3. Boot from a bootable device with Windows OS installation. You can see a bootable device list by pressing **<F11>** during the system startup.

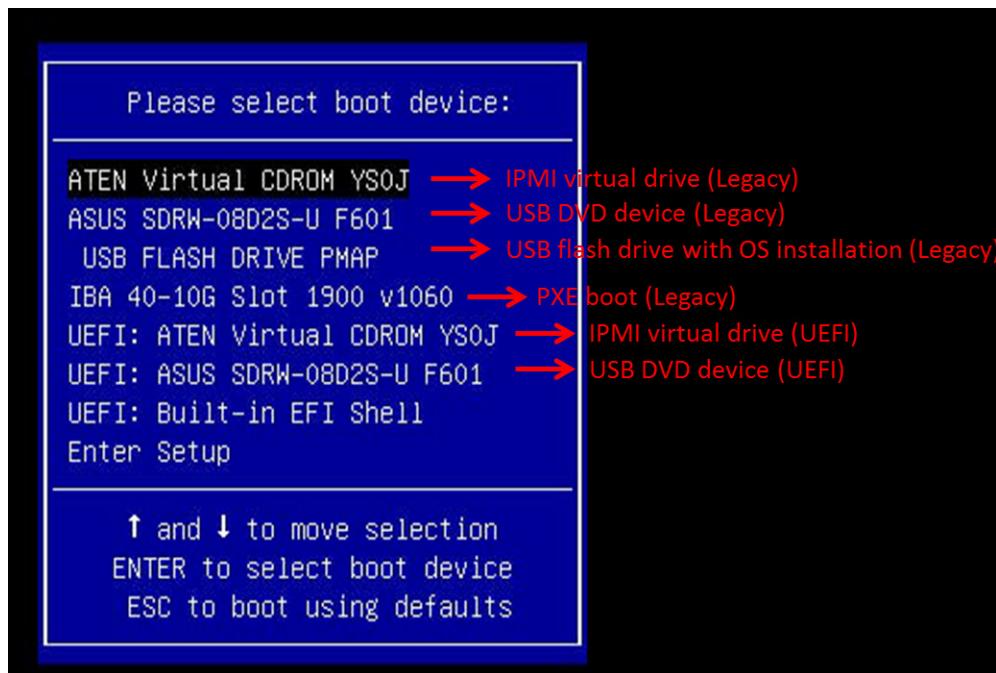


Figure 5-1. Select Boot Device

4. During Windows Setup, continue to the dialog where you select the drives on which to install Windows. If the disk you want to use is not listed, click on “Load driver” link at the bottom left corner.

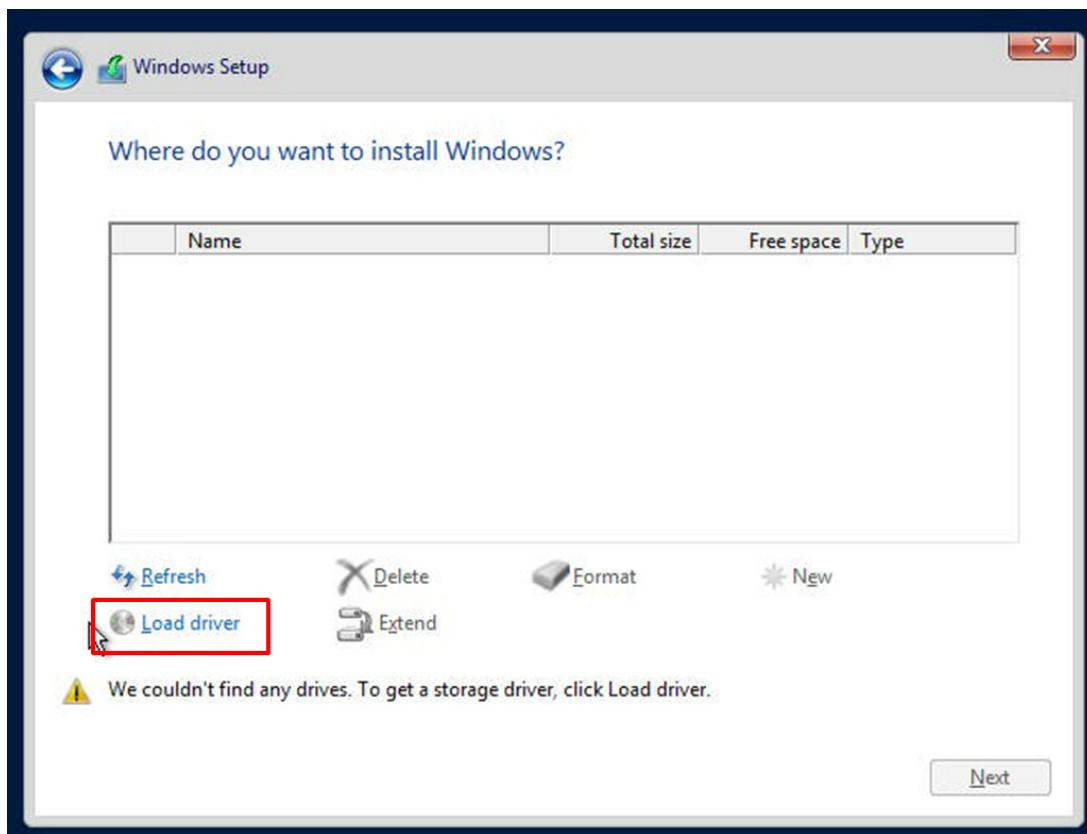


Figure 5-2. Load Driver Link

To load the driver, browse the USB flash or media drive for the proper driver files.

- For RAID, choose the SATA/sSATA RAID driver indicated then choose the storage drive on which you want to install it.
- For non-RAID, choose the SATA/sSATA AHCI driver indicated then choose the storage drive on which you want to install it.

5. Once all devices are specified, continue with the installation.
6. After the Windows OS installation has completed, the system will automatically reboot multiple times.

## 5.2 Driver Installation

The Supermicro website contains drivers and utilities for your system at <https://www.supermicro.com/wdl/>. Some of these must be installed, such as the chipset driver.

After accessing the website, go into the CDR\_Images (in the parent directory of the above link) and locate the ISO file for your motherboard. Download this file to a USB flash or media drive. (You may also use a utility to extract the ISO file if preferred.)

Another option is to go to the Supermicro website at <http://www.supermicro.com/products/>. Find the product page for your motherboard, and "Download the Latest Drivers and Utilities". Insert the flash drive or disk and the screenshot shown below should appear.

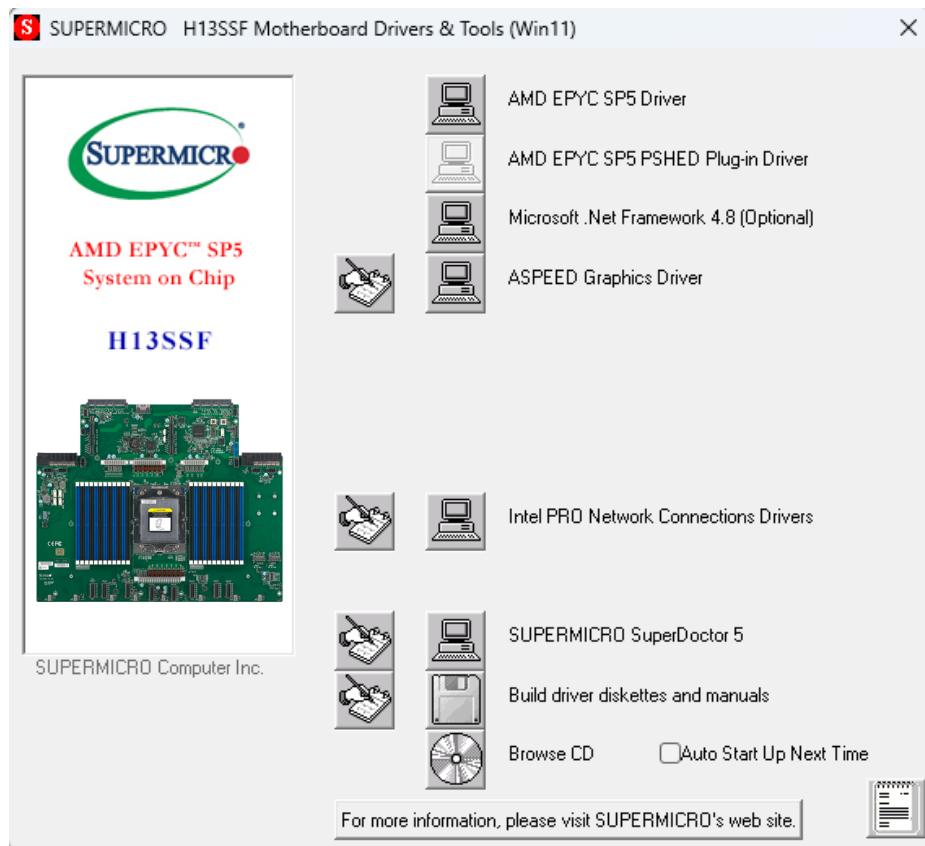


Figure 5-3. Driver & Tool Installation Screen

**Note:** Click the icons showing a hand writing on paper to view the readme files for each item. Click the computer icons to the right of these items to install each item (from top to the bottom) one at a time. **After installing each item, you must re-boot the system before moving on to the next item on the list.** The bottom icon with a CD on it allows you to view the entire contents.

## 5.3 SuperDoctor® 5

The Supermicro SuperDoctor 5 is a program that functions in a command-line or web-based interface for Windows and Linux operating systems. The program monitors such system health information as CPU temperature, system voltages, system power consumption, fan speed, and provides alerts via email or Simple Network Management Protocol (SNMP).

SuperDoctor 5 comes in local and remote management versions and can be used with Nagios to maximize your system monitoring needs. With SuperDoctor 5 Management Server (SSM Server), you can remotely control power on/off and reset chassis intrusion for multiple systems with SuperDoctor 5 or IPMI. SuperDoctor 5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.

### SuperDoctor® Manual and Resources

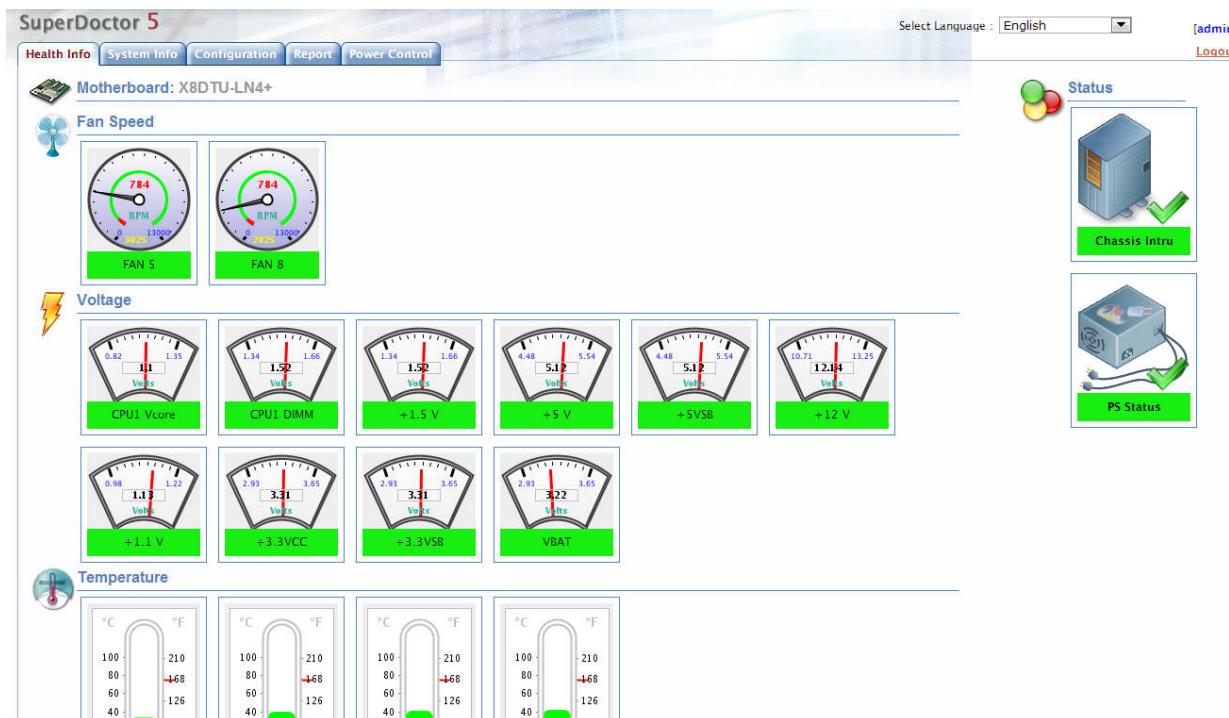


Figure 5-4. SuperDoctor 5 Interface Display Screen (Health Information)

## 5.4 IPMI

The H13SSF supports the Intelligent Platform Management Interface (IPMI). IPMI is used to provide remote access, monitoring and management. There are several BIOS settings that are related to IPMI.

Supermicro ships standard products with a unique password for the BMC ADMIN user. This password can be found on a label on the motherboard.

For general documentation and information on IPMI, please visit our website at: <http://www.supermicro.com/products/info/IPMI.cfm>.

# Chapter 6

## Optional Components

This chapter describes alternate configurations and optional system components.

Optional Parts
<a href="#">TPM Security Module</a>

### 6.1 TPM Security Module

SPI capable TPM 2.0 with Infineon 9670 controller, vertical form factor

The JTPM1 header is used to connect a Trusted Platform Module (TPM). A TPM is a security device that supports encryption and authentication in drives. It enables the motherboard to deny access if the TPM associated with the drive is not installed in the system.

Details and installation procedures are at:

<http://www.supermicro.com/manuals/other/TPM.pdf>.

- AOM-TPM-9670V
- AOM-TPM-9670V-S-O

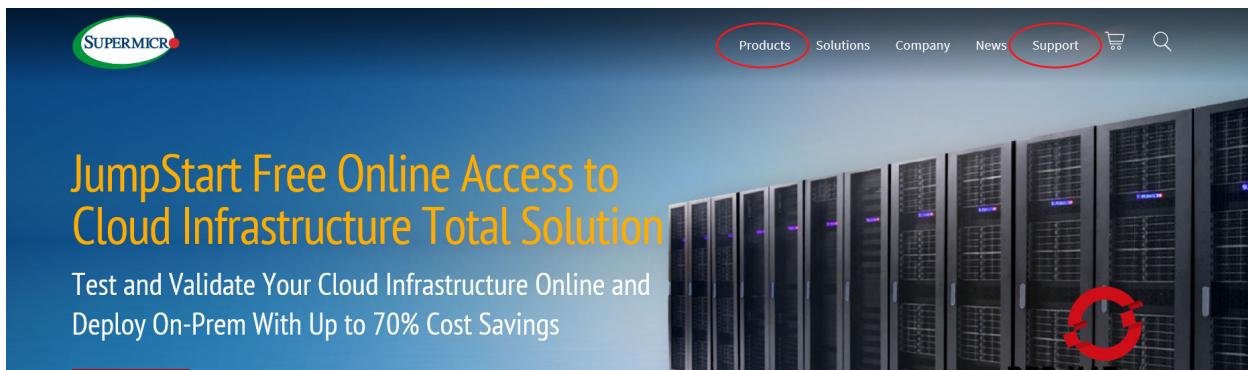
# Chapter 7

## Troubleshooting and Support

### 7.1 Information Resources

#### Website

A great deal of information is available on the Supermicro website, [supermicro.com](http://supermicro.com).



**Figure 7-1. Supermicro Website**

- Specifications for servers and other hardware are available by the **Products** option.
- The **Support** option offers downloads (manuals, BIOS/BMC, drivers, etc.), FAQs, RMA, warranty, and other service extensions.

#### ***Direct Links for the ASG-1115S-NE316R System***

Web [ASG-1115S-NE316R](#) specifications page

[H13SSF](#) motherboard page for links to the Quick Reference Guide, User Manual, validated storage drives, etc.

#### ***Direct Links for General Support and Information***

[Frequently Asked Questions](#)

[TPM User Guide](#)

[BMC User Guide](#)

[SuperDoctor5 Large Deployment Guide](#)

For validated memory, use our [Product Resources page](#)

### Direct Links (continued)

[Product Matrices](#) page for links to tables summarizing specs for systems, motherboards, power supplies, riser cards, add-on cards, etc.

[Security Center](#) for recent security notices

[Supermicro Phone and Addresses](#)

## 7.2 Baseboard Management Controller (BMC)

The system supports the Baseboard Management Controller (BMC). BMC is used to provide remote access, monitoring and management. There are several BIOS settings that are related to BMC.

For general documentation and information on BMC, please visit our website at: [https://www.supermicro.com/manuals/other/BMC\\_IPMI\\_X13\\_H13.pdf](https://www.supermicro.com/manuals/other/BMC_IPMI_X13_H13.pdf)

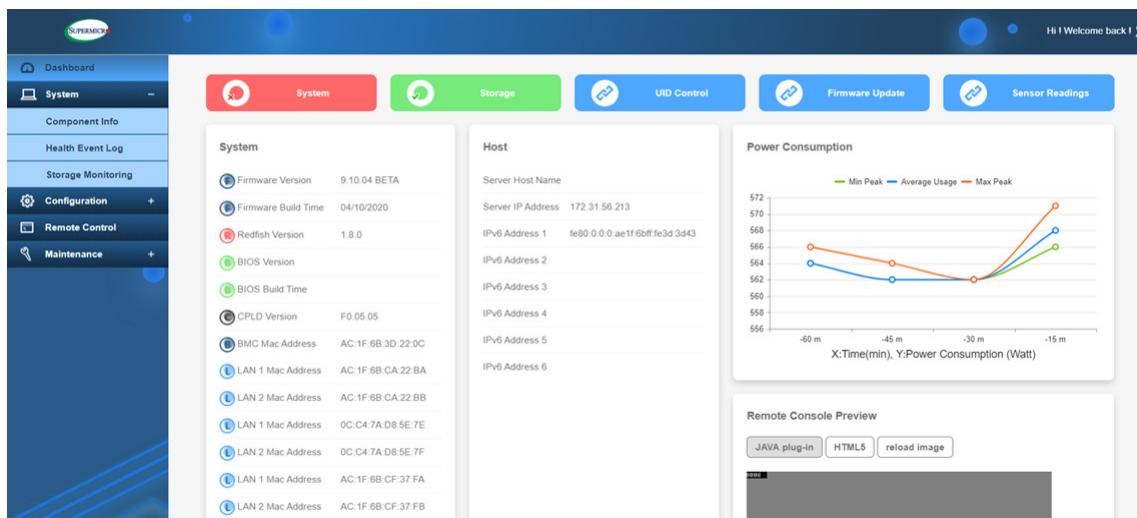


Figure 7-2. BMC Sample

## 7.3 Troubleshooting Procedures

Use the following procedures to troubleshoot your system. If you have followed all of the procedures below and still need assistance, refer to the 'Technical Support Procedures' and/or 'Returning Merchandise for Service' section(s) in this chapter. Always disconnect the AC power cord before adding, changing or installing any non hot-swap hardware components.

### Before Power On

1. Check that the BMC\_HB LED is blinking before the motherboard is turned on.
2. Check that the PWROK LED on the motherboard is on.
3. Make sure that the power connector is connected to your power supply.
4. Make sure that no short circuits exist between the motherboard and chassis.
5. Disconnect all cables from the motherboard, including those for the keyboard and mouse.
6. Remove all add-on cards.
7. Install a CPU, a heatsink\*, and at least one DIMM on the motherboard. Check all jumper settings properly. \*Make sure that the heatsink is fully seated.
8. Use the correct type of onboard CMOS battery (CR2032) as recommended by the manufacturer. To avoid possible explosion, do not install the CMOS battery upside down.

### No Power

1. Make sure that no short circuits exist between the motherboard and the chassis.
2. Verify that all jumpers are set to their default positions.
3. Check that the 115 V / 230 V switch on the power supply is properly set.
4. Turn the power switch on and off to test the system
5. The CMOS battery on your motherboard may be old. Check to verify that it still supplies approximately 3 VDC. If it does not, replace it with a new one.

## No Video

1. Check that the VGA cable is connected properly, and the monitor is on.
2. Check if you follow the guidelines to install the memory module (see DIMM Module Population in Chapter 3).
3. Reseat the memory DIMM module.

**Note:** If you are a system integrator, VAR or OEM, a POST diagnostics card is recommended.

## System Boot Failure

If the system does not display POST (Power-On-Self-Test) or does not respond after the power is turned on, check the following:

1. Clear the CMOS settings by unplugging the power cord and contacting both pads on the CMOS Clear Jumper (JBT1).
2. Remove all components from the motherboard, especially the DIMM modules.
3. Turn on the system with only one DIMM module installed. If the system boots, check for bad DIMM modules or slots by following the Memory Errors Troubleshooting procedure in this Chapter.

## Memory Errors

1. Make sure that the DIMM modules are properly and fully installed.
2. Confirm that you are using the correct memory. Also, it is recommended that you use the same memory type and speed for all DIMMs in the system. See Section 3.4 for memory details.
3. Check for bad DIMM modules or slots by swapping modules between slots and noting the results.
4. Check the power supply voltage 115 V / 230 V switch.

## The System Cannot Retain the Setup Configuration

1. Make sure that you are using a high-quality power supply. A poor-quality power supply may cause the system to lose the CMOS setup information. Refer to Chapter 1 for details on recommended power supplies.
2. The battery on your motherboard may be old. Check to verify that it still supplies approximately 3 VDC. If it does not, replace it with a new one.

3. If the above steps do not fix the setup configuration problem, contact your vendor for repairs.

## When the System Becomes Unstable

***A. If the system becomes unstable during or after OS installation, check the following:***

1. CPU/BIOS support: Make sure that your CPU is supported and that you have the latest BIOS installed in your system.
2. Memory support: Make sure that the memory modules are supported by testing the modules using memtest86 or a similar utility.

**Note:** Refer to the product page on our website at <http://www.supermicro.com> for memory and CPU support and updates.

3. Drive support: Make sure that all drives work properly. Replace the failed drives with good ones.
4. System cooling: Check the system cooling to make sure that all heatsink fans and CPU/system fans, etc., work properly. Check the hardware monitoring settings in the BMC to make sure that the CPU and system temperatures are within the normal range. Also, check the front panel Overheat LED and make sure that it is not on.
5. Adequate power supply: Make sure that the power supply provides adequate power to the system. Make sure that all power connectors are connected. Please refer to our website for more information on the minimum power requirements.
6. Proper software support: Make sure that the correct drivers are used.

***B. If the system becomes unstable before or during OS installation, check the following:***

1. Source of installation: Make sure that the devices used for installation are working properly, including boot devices such as CD/Media drive.
2. Cable connection: Check to make sure that all cables are connected and working properly.
3. Using the minimum configuration for troubleshooting: Remove all unnecessary components (starting with add-on cards first), and use the minimum configuration (but with a CPU and a memory module installed) to identify the trouble areas. Refer to the steps listed in Section 7.3 above for proper troubleshooting procedures.
4. Identifying bad components by isolating them. If necessary, remove a component in question from the chassis, and test it in isolation to make sure that it works properly. Replace a bad component with a good one.

5. Check and change one component at a time instead of changing several items at the same time. This will help isolate and identify the problem.
6. To find out if a component is good, swap this component with a new one to see if the system will work properly. If so, then the old component is bad. You can also install the component in question in another system. If the new system works, the component is good and the old system has problems.

## 7.4 Crash Dump Using BMC

In the event of a processor internal error (IERR) that crashes your system, you may want to provide information to support staff. You can download a crash dump of status information using BMC. The BMC manual is available at [https://www.supermicro.com/\\_manuals/other/BMC\\_IPMI\\_X13\\_H13.pdf](https://www.supermicro.com/_manuals/other/BMC_IPMI_X13_H13.pdf).

### Check BMC Error Log

1. Access the BMC web interface.
2. Click the **Server Health** tab, then **Event Log** to verify an IERR error.

Severity	Date/Time	Sensor Type	Categories	Description	Event Type
Yellow	2020-10-15 18:57:06	ACPowerOn		[ OEM ] First AC Power on - Assertion	Sensor-specific
Green	2020-10-15 18:56:43	System NIC		[ OEM ] Dedicated LAN Link Up - Assertion	Sensor-specific
Yellow	2020-10-15 17:41:37	ACPowerOn		[ OEM ] First AC Power on - Assertion	Sensor-specific
Green	2020-10-15 17:41:17	System NIC		[ OEM ] Dedicated LAN Link Up - Assertion	Sensor-specific
Yellow	2020-10-15 17:41:14	System NIC		[ OEM ] Dedicated LAN Link Down - Assertion	Sensor-specific
Green	2020-10-15 17:41:12	System NIC		[ OEM ] Dedicated LAN Link Up - Assertion	Sensor-specific

Figure 7-3. BMC Event Log

In the event of an IERR, the BMC executes a crash dump. You must download the crash dump and save it.

## 7.5 UEFI BIOS Recovery

**Warning:** Do not upgrade the BIOS unless your system has a BIOS-related issue. Flashing the wrong BIOS can cause irreparable damage to the system. In no event shall Supermicro be liable for direct, indirect, special, incidental, or consequential damages arising from a BIOS update. If you do update the BIOS, do not shut down or reset the system while the BIOS is updating to avoid possible boot failure.

### Overview

The Unified Extensible Firmware Interface (UEFI) provides a software-based interface between the operating system and the platform firmware in the pre-boot environment. The UEFI specification supports an architecture-independent mechanism that will allow the UEFI OS loader stored in an add-on card to boot the system. The UEFI offers clean, hands-off management to a computer during system boot.

### Recovering the UEFI BIOS Image

A UEFI BIOS flash chip consists of a recovery BIOS block and a main BIOS block (a main BIOS image). The recovery block contains critical BIOS codes, including memory detection and recovery codes for the user to flash a healthy BIOS image if the original main BIOS image is corrupted. When the system power is turned on, the recovery block codes execute first. Once this process is complete, the main BIOS code will continue with system initialization and the remaining POST (Power-On Self-Test) routines.

**Note 1:** Follow the BIOS recovery instructions below for BIOS recovery when the main BIOS block crashes.

**Note 2:** When the BIOS recovery block crashes, you will need to follow the procedures to make a Returned Merchandise Authorization (RMA) request. Also, you may use the Supermicro Update Manager (SUM) Out-of-Band ([https://www.supermicro.com.tw/products/info/SMS\\_SUM.cfm](https://www.supermicro.com.tw/products/info/SMS_SUM.cfm)) to reflash the BIOS.

### Recovering the Main BIOS Block with a USB Device

This feature allows the user to recover the main BIOS image using a USB-attached device without additional utilities used. A USB flash device device can be used for this purpose. However, a USB Hard Disk drive cannot be used for BIOS recovery at this time.

The file system supported by the recovery block is FAT (including FAT12, FAT16, and FAT32) which is installed on a bootable or non-bootable USB-attached device. However, the BIOS might need several minutes to locate the SUPER.ROM file if the media size becomes too large due to the huge volumes of folders and files stored in the device.

To perform UEFI BIOS recovery using a USB-attached device, follow the instructions below.

1. Using a different machine, copy the "Super.ROM" binary image file into the Root "\\" directory of a USB flash or media drive.

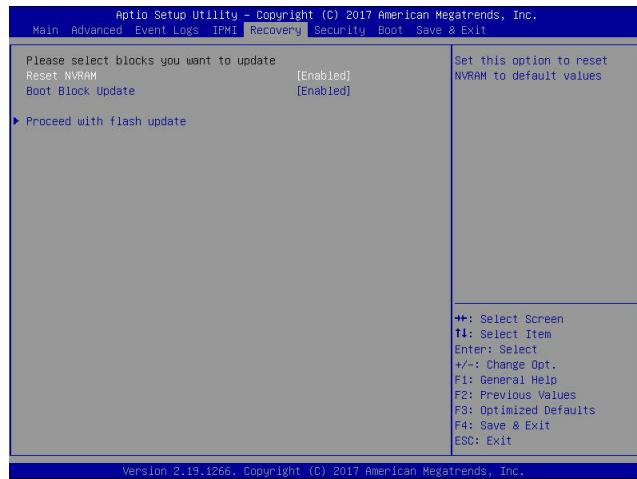
**Note 1:** If you cannot locate the "Super.ROM" file in your drive disk, visit our website at [www.supermicro.com](http://www.supermicro.com) to download the BIOS package. Extract the BIOS binary image into a USB flash device and rename it "Super.ROM" for the BIOS recovery use.

**Note 2:** Before recovering the main BIOS image, confirm that the "Super.ROM" binary image file you download is the same version or a close version meant for your motherboard.

2. Insert the USB device that contains the new BIOS image ("Super.ROM") into your USB drive and reset the system when the following screen appears.
3. After locating the healthy BIOS binary image, the system will enter the BIOS Recovery menu as shown below.



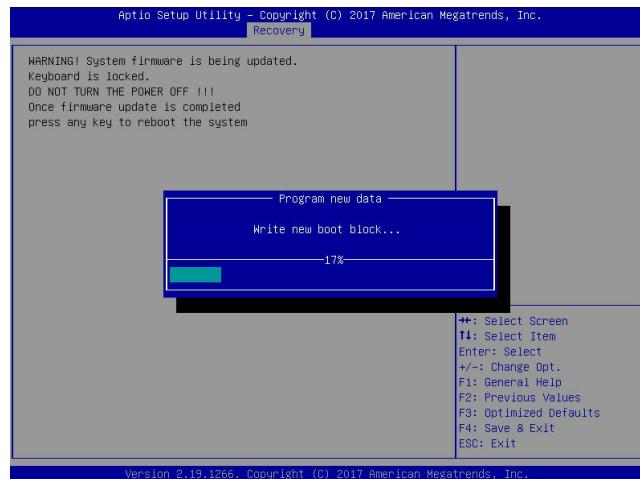
**Note:** At this point, you may decide if you want to start the BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.



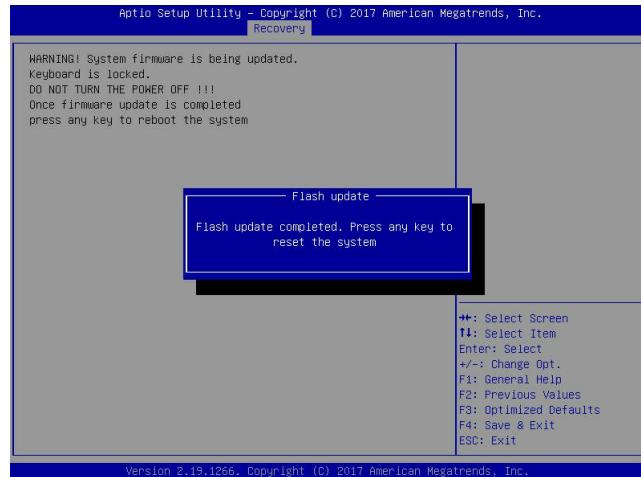
- When the screen as shown above displays, use the arrow keys to select the item "Proceed with flash update" and press the <Enter> key. You will see the BIOS recovery progress as shown in the screen below.

**Note:** *Do not interrupt the BIOS flashing process until it has completed.*

- After the BIOS recovery process is complete, press any key to reboot the system.
- Using a different system, extract the BIOS package into a USB flash drive.

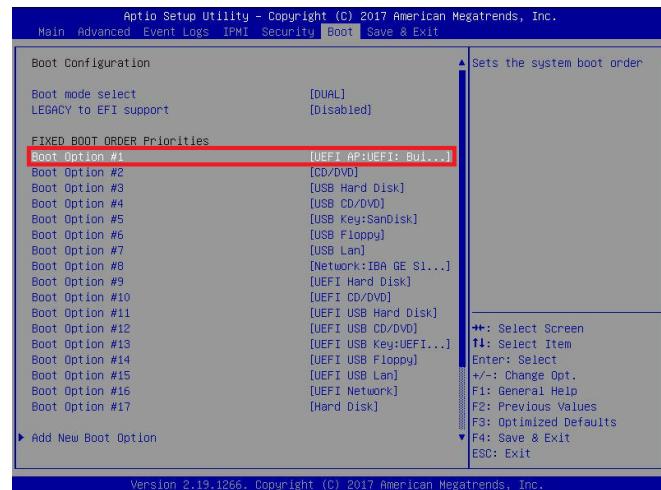


7. Press **<Del>** continuously during system boot to enter the BIOS Setup utility. From the top of the tool bar, select Boot to enter the submenu. From the submenu list, select Boot

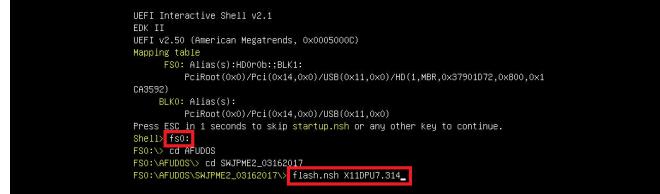


Option #1 as shown below. Then, set Boot Option #1 to [UEFI AP:UEFI: Built-in EFI Shell]. Press **<F4>** to save the settings and exit the BIOS Setup utility.

8. When the UEFI Shell prompt appears, type **fs#** to change the device directory path. Go to the directory that contains the BIOS package you extracted earlier from Step 6. Enter **flash.nsh BIOSname.###** at the prompt to start the BIOS update process.



**Note:** *Do not interrupt this process* until the BIOS flashing is complete.

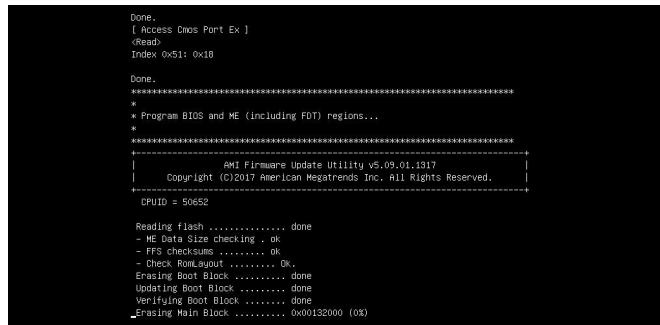


```

UEFI Interactive Shell v2.1
EDK II
UEFI v2.50 (American Megatrends, 0x0005000C)
Mapping table
  FS0: Alias(s):+00R0b::BLK1:
    PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)/HD(1,MBR,0x37901072,0x800,0x1
049592)
  BLK0: Alias(s):
    PciRoot(0x0)/Pci(0x14,0x0)/USB(0x11,0x0)
Press ESC in 1 seconds to skip startup.nsh or any other key to continue.
Shell> fs0:
FS0:> cd \FUDOS
FS0:\FUDOS> cd SJJPME2_03162017
FS0:\FUDOS\SJJPME2_03162017> flash.nsh X10PDU7.314

```

9. The screen above indicates that the BIOS update process is complete. When you see the screen above, unplug the AC power cable from the power supply, clear CMOS, and plug



```

Done.
[ Access Cmos Port Ex ]
<read>
Index 0x51: 0x18

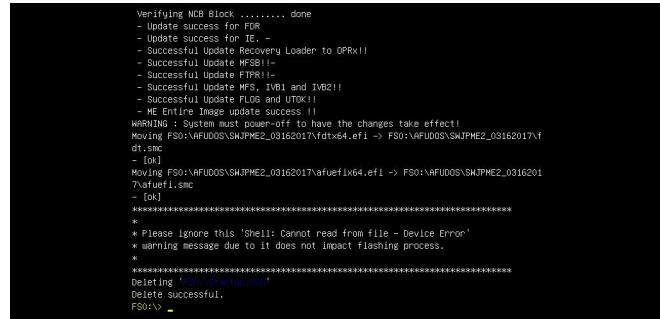
Done.
*****
* Program BIOS and ME (including FOT) regions...
*
*****
| AMI Firmware Update Utility v5.09.01.1317
| copyright (C)2017 American Megatrends Inc. All Rights Reserved.
|
CRVID = 50652

Reading Flash ..... done
- ME Data Size checking .. ok
- FFS checksums ..... ok
- Check RomLayout ..... ok
Erasing Main Block ..... done
Erasing NCB Block ..... done
Verifying Boot Block ..... done
Erasing Main Block ..... (0%) (0%)

```

the AC power cable in the power supply again to power on the system.

10. Press **<Del>** continuously to enter the BIOS Setup utility.



```

Verifying NCB Block ..... done
- Update success for FDR
- Update success for IE, -
- Successful update Recovery Loader to OPRx11
- Successful update MFSB1!
- Successful update FTRP1!
- Successful update MFS, IVB1 and IVB2!
- Successful update FLOG and UTK1!
- ME Data Size checking .. ok
WARNING : System must power-off to have the changes take effect!
Moving FS0:\FUDOS\SJJPME2_03162017\fdtx64.efi -> FS0:\FUDOS\SJJPME2_03162017\f
dt.smc
- [ok]
Moving FS0:\FUDOS\SJJPME2_03162017\afuefi64.efi -> FS0:\FUDOS\SJJPME2_03162017\af
uefi.smc
- [ok]
*****
* Please ignore this 'Shell: Cannot read from file - Device Error'
* warning message due to it does not impact flashing process.
*
*****
Deleting "fs0:\fudos\fdtx64.efi"
Delete successful.
FS0:> -

```

11. Press **<F3>** to load the default settings.

12. After loading the default settings, press **<F4>** to save the settings and exit the BIOS Setup utility.

## 7.6 CMOS Clear

GBT1 is used to clear CMOS, which will also clear any passwords. Instead of pins, this jumper consists of contact pads to prevent accidentally clearing the contents of CMOS.

### ***To Clear CMOS***

1. First power down the system completely.
2. Remove chassis cover to access the motherboard.
3. Remove the onboard battery from the motherboard.
4. Short the CMOS pads with a metal object such as a small screwdriver for at least four seconds.
5. Remove the screwdriver or shorting device.
6. Re-install the battery.
7. Replace the cover, reconnect the power cords and power on the system.

**Notes:** Clearing CMOS will also clear all passwords.

*Do not use the PW\_ON connector to clear CMOS.*



## 7.7 Where to Get Replacement Components

If you need replacement parts for your system, to ensure the highest level of professional service and technical support, purchase exclusively from our Supermicro Authorized Distributors/System Integrators/Resellers. A list can be found at: <http://www.supermicro.com>. Click the "Where to Buy" tab.

## 7.8 BMC

The BMC can be reset using the button on the front control panel or on the chassis rear.

- Reset—Press and hold the button. After six seconds, the LED blinks at 2 Hz. The BMC resets and the reset duration is approximately 250 ms. Then the BMC starts to boot.
- Restore factory default configuration—Hold the button for twelve seconds. The LED blinks at 4 Hz while defaults are configured.
- Firmware update—the UID LED blinks at 10 Hz during a firmware update.

BMC Reset Options	
Event	LED (Green)
Reset	Blinks at 2 Hz
Restore Defaults	Blinks at 4 Hz
Update	Blinks at 10 Hz

## 7.9 Reporting an Issue

### Technical Support Procedures

Before contacting Technical Support, please take the following steps. If your system was purchased through a distributor or reseller, please contact them for troubleshooting services. They have the best knowledge of your specific system configuration.

1. Please review the [Troubleshooting Procedures](#) in this manual and [Frequently Asked Questions](#) on our website before contacting Technical Support.
2. BIOS upgrades can be downloaded from our website. **Note:** Not all BIOS can be flashed depending on the modifications to the boot block code.
3. If you still cannot resolve the problem, include the following information when contacting us for technical support:
  - System, motherboard, and chassis model numbers and PCB revision number
  - BIOS release date/version (this can be seen on the initial display when your system first boots up)
  - System configuration

An example of a Technical Support form is posted on our [website](#). Distributors: For immediate assistance, please have your account number ready when contacting our technical support department by email.

### Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (<http://www.supermicro.com/support/rma/>).

Whenever possible, repack the chassis in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the chassis securely, using packaging material to surround the chassis so that it does not shift within the carton and become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

## 7.10 Feedback

Supermicro values your feedback as we strive to improve our customer experience in all facets of our business. Please email us at [techwriterteam@supermicro.com](mailto:techwriterteam@supermicro.com) to provide feedback on our manuals.

## Appendix A

# Standardized Warning Statements for AC Systems

### About Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis.

These warnings may also be found on our website at [http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm).

### Warning Definition



**Warning!** This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

警告の定義

この警告サインは危険を意味します。

人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危险。

您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾的声明号码找到此设备的安全性警告说明的翻译文本。

此警告符号代表危險。

您正處於可能身體可能會受損傷的工作環境中。在您使用任何設備之前，請注意觸電的危險，並且要熟悉預防事故發生的標準工作程序。請依照每一注意事項後的號碼找到相關的翻譯說明內容。

## Warnung

### WICHTIGE SICHERHEITSHINWEISE

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung von Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

### INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES.

### IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS.

תקנון הצהרות אזהרה

הצהרות הבאות הן אזהרות על פי התקני התעשייה, על מנת להזהיר את המשתמש מפני חבלה פיזית אפשרית. במידה ויש שאלות או היתקלות בעיה כלשהי, יש ליצור קשר עם מחלקת תמייה טכנית של סופרמיקרו. טכנאים מוסמכים בלבד רשאים להתקין או להגדיר את הרכיבים. יש לקרוא את הנספח במלואו לפני התקנת או הגדרת הרכיבים במאזן סופרמיקרו.

اًكَ فَحَالَةٌ وُكِيَ أَيْ تَتَسَبَّبُ فِي اصَابَةٍ جَسْدَهُ هَذَا الْزَهْزَعُ عُ خَطْرٌ! تَحْذِيرٌ .  
 قَبْلَ أَيْ تَعْوِلَ عَلَى أَيْ هَعْدَاتٍ، كَيْ عَلَى عَلَنْ بِالْوَخَاطِرِ الْأَجْوَهُ عَيْ الْذَوَائِزِ  
 الْكَهْزَبَائِيَّةِ  
 وَكَيْ عَلَى دَرَّهُ بِالْوَوَارِسَاتِ الْقَائِيَّةِ لَوْعُ وَقْعِ أَيْ حَادِثٍ  
 اسْتَخْدِمْ رَقْنَ الْبِلِّي الْوَصْصَ فَهَاهُ كُلَّ تَحْذِيرٍ لِلْعَشْرِ تَرْجُوتَهَا

### 안전을 위한 주의사항

#### 경고!

이 경고 기호는 위험이 있음을 알려 줍니다. 작업자의 신체에 부상을 야기 할 수 있는 상태에 있게 됩니다. 모든 장비에 대한 작업을 수행하기 전에 전기회로와 관련된 위험요소들을 확인하시고 사전에 사고를 방지할 수 있도록 표준 작업절차를 준수해 주시기 바랍니다.

해당 번역문을 찾기 위해 각 경고의 마지막 부분에 제공된 경고문 번호를 참조하십시오

### BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij een elektrische installatie betrokken risico's en dient u op de hoogte te zijn van de standaard procedures om ongelukken te voorkomen. Gebruik de nummers aan het eind van elke waarschuwing om deze te herleiden naar de desbetreffende locatie.

### BEWAAR DEZE INSTRUCTIES

### Installation Instructions



**Warning!** Read the installation instructions before connecting the system to the power source.

#### 設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

#### 警告

将此系统连接电源前,请先阅读安装说明。

#### 警告

將系統與電源連接前，請先閱讀安裝說明。

### Warnung

Vor dem Anschließen des Systems an die Stromquelle die Installationsanweisungen lesen.

### ¡Advertencia!

Lea las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

### Attention

Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

יש לקרוא את הוראות התקינה לפני חיבור המערכת למקור מתח.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

### Waarschuwing

Raadpleeg de installatie-instructies voordat u het systeem op de voedingsbron aansluit.

## Circuit Breaker



**Warning!** This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 20 A.

### サーキット・ブレーカー

この製品は、短絡(過電流)保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

### 警告

此产品的短路(过载电流)保护由建筑物的供电系统提供,确保短路保护设备的额定电流不大于250V,20A。

### 警告

此產品的短路(過載電流)保護由建築物的供電系統提供,確保短路保護設備的額定電流不大於250V,20A。

### Warnung

Dieses Produkt ist darauf angewiesen, dass im Gebäude ein Kurzschluss- bzw. Überstromschutz installiert ist. Stellen Sie sicher, dass der Nennwert der Schutzvorrichtung nicht mehr als: 250 V, 20 A beträgt.

### ¡Advertencia!

Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del edificio. Asegúrese de que el dispositivo de protección no sea superior a: 250 V, 20 A.

### Attention

Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifiez que le courant nominal du dispositif de protection n'est pas supérieur à :250 V, 20 A.

מווצר זה מסתמך על הגנה המותקנת במבנים **למניעת קוצר חשמל**. יש לוודא כי המכשיר המגן מפני הקוצר החשמלי הוא לא יותר מ- 250VDC, 20A

هذا المنتج يعتمد على معدات الحماية من الدوائر القصيرة التي تم تثبيتها في المبني  
تأكد من أن تقييم الجهاز الوقائي ليس أكثر من : 20A, 250V

### 경고!

이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다.  
보호장치의 정격이 반드시 250V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

### Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw electrische installatie. Controleer of het beveiligde apparaat niet groter gedimensioneerd is dan 250V, 20A.

## Power Disconnection Warning



**Warning!** The system must be disconnected from all sources of power and the power cord removed from the power supply module(s) before accessing the chassis interior to install or remove system components (except for hot-swap components).



### 電源切斷の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシ内部にアクセスするには、システムの電源はすべてのソースから切断され、電源コードは電源モジュールから取り外す必要があります。

### 警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

### 警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

### Warnung

Das System muss von allen Quellen der Energie und vom Netzanschlusskabel getrennt sein, das von den Spg. Versorgungsteilmodulen entfernt wird, bevor es auf den Chassisinnenraum zurückgreift, um Systemsbestandteile anzubringen oder zu entfernen.

### ¡Advertencia!

El sistema debe ser disconnected de todas las fuentes de energía y del cable eléctrico quitado de los módulos de fuente de alimentación antes de tener acceso el interior del chasis para instalar o para quitar componentes de sistema.

### Attention

Le système doit être débranché de toutes les sources de puissance ainsi que de son cordon d'alimentation secteur avant d'accéder à l'intérieur du chasis pour installer ou enlever des composants de système.

ازهراه مفني نيتوك حشملي

ازهراه!

יש לנתק את המערכת מכל מקורות החשמל וייש להסיר את כבל החשמלי מהספק.  
לפni גישה לחלק הפנימי של המארז לצורך התקנת או הסרת רכיבים.

يجب فصل انتظاراً من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد  
انطاقت قبم

انصل إنى امناطق انداخهيت نههيكم نتشبيج أو إزانت مكناث الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 새시 내부에 접근하기 전에 반드시 전원  
공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

#### Waarschuwing

Voordat u toegang neemt tot het binnenwerk van de behuizing voor het installeren of  
verwijderen van systeem onderdelen, dient u alle spanningsbronnen en alle stroomkabels  
aangesloten op de voeding(en) van de behuizing te verwijderen

## Equipment Installation



**Warning!** Only authorized personnel and qualified service persons should be allowed to install, replace, or service this equipment.

機器の設置

トレーニングを受け認定された人だけがこの装置の設置、交換、またはサービスを許可されています。

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

Nur autorisiertes Personal und qualifizierte Servicetechniker dürfen dieses Gerät installieren, austauschen oder warten..

¡Advertencia!

Sólo el personal autorizado y el personal de servicio calificado deben poder instalar, reemplazar o dar servicio a este equipo.

**Attention**

Seul le personnel autorisé et le personnel de maintenance qualifié doivent être autorisés à installer, remplacer ou entretenir cet équipement..

ازהרה!

יש לאפשר רק צוות מורה ואנשי שירות מוסמכים להתקין, להחליף או לטפל בציוד זה.

ينبغي السماح فقط للموظفين المعتمدين وأفراد الخدمة المؤهلين بتركيب هذا الجهاز أو استبداله أو صيانته.

**경고!**

승인된 직원과 자격을 갖춘 서비스 담당자만이 이 장비를 설치, 교체 또는 서비스할 수 있습니다.

**Waarschuwing**

Alleen geautoriseerd personeel en gekwalificeerd onderhoudspersoneel mag deze apparatuur installeren, vervangen of onderhouden..

**Restricted Area**

**Warning!** This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. (This warning does not apply to workstations).

**アクセス制限区域**

このユニットは、アクセス制限区域に設置されることを想定しています。

アクセス制限区域は、特別なツール、鍵と錠前、他のセキュリティの手段を用いてのみ出入りが可能です。

**警告**

此部件应安装在限制进出的场所，限制进出的场所指只能通过使用特殊工具、锁和钥匙或其它安全手段进出的场所。

**警告**

此裝置僅限安裝於進出管制區域，進出管制區域係指僅能以特殊工具、鎖頭及鑰匙或其他安全方式才能進入的區域。

### Warnung

Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Der Zutritt zu derartigen Bereichen ist nur mit einem Spezialwerkzeug, Schloss und Schlüssel oder einer sonstigen Sicherheitsvorkehrung möglich.

### ¡Advertencia!

Esta unidad ha sido diseñada para instalación en áreas de acceso restringido. Sólo puede obtenerse acceso a una de estas áreas mediante la utilización de una herramienta especial, cerradura con llave u otro medio de seguridad.

### Attention

Cet appareil doit être installée dans des zones d'accès réservés. L'accès à une zone d'accès réservé n'est possible qu'en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité.

אזור עם גישה מוגבלת  
ゾーハה!

יש להתקן את היחידה באזוריים שיש בהם הגבלת גישה. הגישה ניתנת בעזרת  
כלי אבטחה בלבד (מפתח, מנעול ועוד).

تحصيص هذه انحذة ترك بها ف مناطق محظورة تم .  
يمكن انتصيل إن منطق ممحظورة فقط من خلال استخدام أداة خاصة  
أو أوس هُت أخرى نلاًاما قم و مفتاح

### 경고!

이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 특수도구, 잠금 장치 및 키,  
또는 기타 보안 수단을 통해서만 접근 제한 구역에 들어갈 수 있습니다.

### Waarschuwing

Dit apparaat is bedoeld voor installatie in gebieden met een beperkte toegang. Toegang tot dergelijke gebieden kunnen alleen verkregen worden door gebruik te maken van speciaal gereedschap, slot en sleutel of andere veiligheidsmaatregelen.

## Battery Handling



**Warning!** There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions

### 電池の取り扱い

電池交換が正しく行われなかった場合、破裂の危険性があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

### 警告

电池更换不当会有爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更换原有电池。请按制造商的说明处理废旧电池。

### 警告

電池更換不當會有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

### Warnung

Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

### Attention

Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

### ¡Advertencia!

Existe peligro de explosión si la batería se reemplaza de manera incorrecta. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

### אזהרה!

קיימת סכנת פיצוץ של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף את הסוללה בסוג התואם מחברת יצורן מומלצת.  
סילוק הסוללות המשמשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة اسحذال البطارية بطريقة غير صحيحة فعليل  
اسحذال البطارية

فقط بنفس النوع أو ما يعادلها مما أوصى به الشرمة المصنعة  
جخلص من البطاريات المسحعملة وفقا لتعليمات الشرمة الصانعة

경고!

배터리가 올바르게 교체되지 않으면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

Waarschuwing

Er is ontploffingsgevaar indien de batterij verkeerd vervangen wordt. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.

## Redundant Power Supplies



**Warning!** This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告

此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告

此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein Strom zugeführt wird, müssen alle Verbindungen entfernt werden.

### ¡Advertencia!

Puede que esta unidad tenga más de una conexión para fuentes de alimentación. Para cortar por completo el suministro de energía, deben desconectarse todas las conexiones.

### Attention

Cette unité peut avoir plus d'une connexion d'alimentation. Pour supprimer toute tension et tout courant électrique de l'unité, toutes les connexions d'alimentation doivent être débranchées.

אם קיים יותר מספק אחד  
אוורה!

ליחדה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן  
את היחידה.

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة .  
يجب إزالة كافة الاتصالات لعزل الوحدة عن الكهرباء

### 경고!

이 장치에는 한 개 이상의 전원 공급 단자가 연결되어 있을 수 있습니다. 이 장치에 전원을 차단하기 위해서는 모든 연결 단자를 제거해야만 합니다.

### Waarschuwing

Deze eenheid kan meer dan één stroomtoevoeraansluiting bevatten. Alle aansluitingen dienen verwijderd te worden om het apparaat stroomloos te maken.

## Backplane Voltage



**Warning!** Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.

バックプレーンの電圧

システムの稼働中は危険な電圧または電力が、バックプレーン上にかかりています。

修理する際には注意ください。

警告

当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告

當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

Wenn das System in Betrieb ist, treten auf der Rückwandplatine gefährliche Spannungen oder Energien auf. Vorsicht bei der Wartung.

¡Advertencia!

Cuando el sistema está en funcionamiento, el voltaje del plano trasero es peligroso. Tenga cuidado cuando lo revise.

Attention

Lorsque le système est en fonctionnement, des tensions électriques circulent sur le fond de panier. Prendre des précautions lors de la maintenance.

מתה בפנל האחורי

אוורה!

קיימת סכנת מתה בפנל האחורי בזמן תפעול המערכת. יש להיזהר במהלך העבודה.

هناك خطر مه التيار الكهربائي أو الطاقة المبذدة على اللحمة  
عندما يكن النظام يعمل كه حذرا عند خدمة هذا الجهاز

경고!

시스템이 동작 중일 때 후면판 (Backplane)에는 위험한 전압이나 에너지가 발생 합니다.  
서비스 작업 시 주의하십시오.

Waarschuwing

Een gevaarlijke spanning of energie is aanwezig op de backplane wanneer het systeem in gebruik is. Voorzichtigheid is geboden tijdens het onderhoud.

## Comply with Local and National Electrical Codes



**Warning!** Installation of the equipment must comply with local and national electrical codes.

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

La instalacion del equipo debe cumplir con las normas de electricidad locales y nacionales.

Attention

L'équipement doit être installé conformément aux normes électriques nationales et locales.

תיאום חוקי החשמל הארצי

אוורה!

התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והלאומיים.

تركيب المعدات الكهربائية يجب أن يمتثل للقوانين المحلية والدولية المتعلقة بالكهرباء.

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

Bij installatie van de apparatuur moet worden voldaan aan de lokale en nationale elektriciteitsvoorschriften.

## Product Disposal



**Warning!** Ultimate disposal of this product should be handled according to all national laws and regulations.

製品の廃棄

この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡Advertencia!

Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

**Attention**

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

סילוק המוצר

אוֹהֶרֶה!

סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות וחוקי המדינה.

التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقاً لجميع القوانين واللائحة الوطنية عند

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

**Waarschuwing**

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

**Fan Warning**

**Warning!** Hazardous moving parts. Keep away from moving fan blades. The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

ファンの警告

警告!回転部品に注意。運転中は回転部(羽根)に触れないでください。シャーシから冷却ファン装置を取り外した際、ファンがまだ回転している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。

警告!

警告！危险的可移动性零件。请务必与转动的风扇叶片保持距离。当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇

警告

危險的可移動性零件。請務必與轉動的風扇葉片保持距離。當您從機架移除風扇裝置，風扇可能仍在轉動。小心不要將手指、螺絲起子和其他物品太靠近風扇。

### Warnung

Gefährlich Bewegende Teile. Von den bewegenden Lüfterblätter fern halten. Die Lüfter drehen sich u. U. noch, wenn die Lüfterbaugruppe aus dem Chassis genommen wird. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses entfernt.

### ¡Advertencia!

Riesgo de piezas móviles. Mantener alejado de las aspas del ventilador. Los ventiladores podran dar vuelta cuando usted quite el montaje del ventilador del chasis. Mantenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

### Attention

Pieces mobiles dangereuses. Se tenir a l'écart des lames du ventilateur Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirerez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

### ازهارה!

חלקים נייחים מסוכנים. התרחק מלהבי המא Orr בפעולת הכח מסירם את חלקו המא Orr מהמארז, יתכן והמא Orrים עדיין עובדים. יש להרחק למרחק בטוח את הא צבעות וכל עבודה שונות מהפתחים בתוך המא Orr

تحذير! أجزاء متحركة خطيرة. ابتعد عن شفرات المروحة المتحركة. من الممكن أن المروحة لا تزال تدور عند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع ومفكات البراغي وغيرها من الأشياء بعيداً عن الفتحات في كتلة المروحة.

### 경고!

움직이는 위험한 부품. 회전하는 송풍 날개에 접근하지 마세요. 새시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조립품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

### Waarschuwing

Gevaarlijk bewegende onderdelen. Houd voldoende afstand tot de bewegende ventilatorbladen. Het is mogelijk dat de ventilator nog draait tijdens het verwijderen van het ventilatorsamenstel uit het chassis. Houd uw vingers, schroevendraaiers en eventuele andere voorwerpen uit de buurt van de openingen in de ventilatorbehuizing.

## Power Cable and AC Adapter



**Warning!** When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the cord) for any other electrical devices than products designated by Supermicro only.

### 電源コードとACアダプター

製品を設置する場合、提供または指定および購入された接続ケーブル、電源コードとACアダプターを該当する地域の条例や安全基準に適合するコードサイズやプラグと共に使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。

電気用品安全法は、ULまたはCSA認定のケーブル(UL/CSAマークがコードに表記)を Supermicro が指定する製品以外に使用することを禁止しています。

### 警告

安装此产品时,请使用本身提供的或指定的或采购的连接线,电源线和电源适配器, 包含遵照当地法规和安全要求的合规的电源线尺寸和插头. 使用其它线材或适配器可能会引起故障或火灾。除了Supermicro所指定的产品,电气用品和材料安全法律规定禁止使用未经UL或CSA认证的线材。(线材上会显示UL/CSA符号)。

### 警告

安裝此產品時,請使用本身提供的或指定的或採購的連接線,電源線和電源適配器, 包含遵照當地法規和安全要求的合規的電源線尺寸和插頭. 使用其它線材或適配器可能會引起故障或火災。除了Supermicro所指定的產品,電氣用品和材料安全法律規定禁止使用未經UL或CSA認證的線材。(線材上會顯示UL/CSA符號)。

### Warnung

Nutzen Sie beim Installieren des Produkts ausschließlich die von uns zur Verfügung gestellten Verbindungskabeln, Stromkabeln und/oder Adapter, die Ihre örtlichen Sicherheitsstandards einhalten. Der Gebrauch von anderen Kabeln und Adaptern können Fehlfunktionen oder Feuer verursachen. Die Richtlinien untersagen das Nutzen von UL oder CAS zertifizierten Kabeln (mit UL/CSA gekennzeichnet), an Geräten oder Produkten die nicht mit Supermicro gekennzeichnet sind.

## ¡Advertencia!

Cuando instale el producto, utilice la conexión provista o designada o procure cables, Cables de alimentación y adaptadores de CA que cumplan con los códigos locales y los requisitos de seguridad, incluyendo el tamaño adecuado del cable y el enchufe. El uso de otros cables y adaptadores podría causar un mal funcionamiento o un incendio. La Ley de Seguridad de Aparatos Eléctricos y de Materiales prohíbe El uso de cables certificados por UL o CSA (que tienen el certificado UL / CSA en el código) para cualquier otros dispositivos eléctricos que los productos designados únicamente por Supermicro.

## Attention

Lors de l'installation du produit, utilisez les cables de connection fournis ou désigné ou achetez des cables, cables de puissance et adaptateurs respectant les normes locales et les conditions de securite y compris les tailles de cables et les prises electriques appropries. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et la Loi sur la Sécurité Matériel interdit l'utilisation de câbles certifies- UL ou CSA (qui ont UL ou CSA indiqué sur le code) pour tous les autres appareils électriques sauf les produits désignés par Supermicro seulement.

AC ימאתו פילמשח פיליב  
הרחה!

רוצל ומאותה ואחרון רשא AC סימאטמו פיקפו, מילבכ שמתהיל שי, רצומה תא פיניקתם רשאכ לבכ שומיש . עקתהו לבכח לש הנוכנ הדימ לLOC, תויומוקמה תוחיטבה תושירדל ומאותה רשאו, הנקתהה למשחה ירישכמב שומישה יקוחל פאתהב . ילמשח רצק וא הלקתל סורגל לולע, רחא גוסמ פאתם וא לבכ לש דוק סהילע עיפומ רשאכ) CSA-ב וא UL -ב סיכמסומה מילבכ שמתהיל רוסיא פ'יק, תוחיטבה יקוחו דבלב Supermicro . י"ע מאותה רשא רצומב קור אלא, רחא ילמשח רצום לכ רחבע CSA/UL)

### 전원 케이블 및 AC 어댑터

경고! 제품을 설치할 때 현지 코드 및 적절한 굽기의 코드와 플러그를 포함한 안전 요구 사항을 준수하여 제공되거나 지정된 연결 혹은 구매 케이블, 전원 케이블 및 AC 어댑터를 사용하십시오.

다른 케이블이나 어댑터를 사용하면 오작동이나 화재가 발생할 수 있습니다. 전기 용품 안전법은 UL 또는 CSA 인증 케이블 (코드에 UL / CSA가 표시된 케이블)을 Supermicro 가 지정한 제품 이외의 전기 장치에 사용하는 것을 금지합니다.

### Stroomkabel en AC-Adapter

Waarschuwing! Bij het aansluiten van het Product uitsluitend gebruik maken van de geleverde Kabels of een andere geschikte aan te schaffen Aansluitmethode, deze moet altijd voldoen aan de lokale voorschriften en veiligheidsnormen, inclusief de juiste kabeldikte en stekker. Het gebruik van niet geschikte Kabels en/of Adapters kan een storing of brand veroorzaken. Wetgeving voor Elektrische apparatuur en Materiaalveiligheid verbied het gebruik van UL of CSA -gecertificeerde Kabels (met UL/CSA in de code) voor elke andere toepassing dan de door Supermicro hiervoor beoogde Producten.

# Appendix B

## System Specifications

### Processors

Single AMD EPYC™ 9004 Series Processor in SP5 socket

### BIOS

- 256Mb SPI AMI BIOS® SM Flash UEFI BIOS
- ACPI 6.4, SMBIOS 3.5.0, Plug-and-Play (PnP), RTC (Real Time Clock) wakeup, Riser Card Auto-Detection Support

### Memory

24 DIMM slots with 2 DIMM per channel (up to 6 TB DDR5-4000 MT/s (1R) /3600 MT/s (2R))

-or-

12 DIMM slots with 1 DIMM per channel (up to 3 TB DDR5-4800 MT/s)

### Storage Drives

Supports up to 16 hot-swap drive bays for E3.S (1T) NVMe drives

Two M.2 NVMe/SATA slots with support for M-Key 2280 and 22110

### PCI Expansion Slots

Two PCIe 5.0 x16 slots (FHHL) - maximum boundary 4.376 x 6.00 x 0.8 in /111.15 x 167.65 x 20.32 mm

Two Gen-Z x16 AIOM PCIe 5.0 connectors (OCP 3.0 SFF compliant)

### Input/Output

One BMC LAN port

One VGA port

Four USB 3.0 ports (two front and two rear)

### Motherboard

H13SSF 17" (W) x 13.63" (L), (431.8 x 346.2 mm)

### Chassis

CSE-126E32-R1K62P 1U: 1.7 x 17.2 x 30.4 in / 43.6 x 438.4 x 773.25 mm (H x W x D)

### System Cooling

Eight 4-cm fans with optimal speed control

One air shroud

### Security

Trusted Platform Module (TPM) support

### Power Supply

Model: PWS-1K62A-1R, 1600 W Redundant modules, 80Plus Titanium level\*

\*Full redundancy based on configuration and application load

AC Input

800 W: 100-127 Vac / 9.8 A-7 A / 50-60 Hz

1200 W: 200-240 Vac / 7.5 A-6 A / 50-60 Hz

+12 V

Max: 83 A / Min: 0 A (100 Vac-127 Vac)

Max: 100 A / Min: 0 A (200 Vac-240 Vac)

12 V SB

Max: 2.1 A / Min: 0 A

**Operating Environment**

Operating Temperature: 10 °C to 35 °C (50 °F to 95 °F)\*

\*Operating Temperature based on configurations

Non-operating Temperature: -40 °C to 60 °C (-40 °F to 140 °F)

Operating Relative Humidity: 8% to 90% (non-condensing)

Non-operating Relative Humidity: 5% to 95% (non-condensing)

**Regulatory Compliance**

FCC, ICES, CE, VCCI, RCM, UKCA, NRTL, CB

**Applied Directives, Standards**

EMC/EMI: 2014/30/EU (EMC Directive)

Electromagnetic Compatibility Regulations 2016

FCC Part 15 Subpart B

ICES-003

VCCI-CISPR 32

AS/NZS CISPR 32

BS/EN55032

BS/EN55035

BS/EN 61000-3-2

BS/EN 61000-3-3

BS/EN 61000-4-2

BS/EN 61000-4-3

BS/EN 61000-4-4

BS/EN 61000-4-5

BS/EN 61000-4-6

BS/EN 61000-4-8

BS/EN 61000-4-11

Green Environment:

2011/65/EU (RoHS Directive)

EC 1907/2006 (REACH)

2012/19/EU (WEEE Directive)

California Proposition 65

Product Safety: 2014/35/EU (LVD Directive)

Electrical Equipment (Safety) Regulations 2016

UL/CSA 62368-1 (USA and Canada)

BS/IEC/EN 62368-1

**Perchlorate Warning**

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. "Perchlorate Material-special handling may apply. See [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate)"

この装置は、クラスA機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI — A